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The mediating role of teaching enthusiasm in the relationship between mindfulness, growth mindset, and psychological well-being of Chinese EFL teachers

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This mixed-methods study investigates the complex factors affecting the psychological well-being of Chinese EFL teachers, particularly the direct effects of mindfulness and growth mindset, and the mediating role of teaching enthusiasm. A quantitative survey ($n = 268$) was distributed to EFL teachers across diverse provinces in China. Established scales measured psychological well-being, mindfulness, growth mindset, and teaching enthusiasm. The data was analyzed using structural equation modeling (SEM) with two phases in SPSS and AMOS software. A qualitative phase, employing semi-structured interviews with a subsample ($n = 12$) of participants, provided deeper insights into the lived experiences of teachers. The quantitative analysis yielded positive direct relationships between mindfulness, growth mindset, and well-being. Notably, teaching enthusiasm emerged as a significant mediating factor. These findings suggest that mindfulness and growth mindset indirectly influence well-being through their positive impact on teaching enthusiasm. The qualitative data corroborated these results, showcasing how mindfulness practices and a growth mindset contribute to a more passionate and fulfilling teaching experience. These combined findings underscore the importance of promoting mindfulness, growth mindset, and teaching enthusiasm to enhance the psychological well-being of Chinese EFL teachers.

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Introduction

The teaching profession, while immensely rewarding, can be fraught with challenges and demands. This is particularly true within the dynamic English as a Foreign Language (EFL) context in China. The educational landscape in China undergoes rapid changes, and high expectations are placed on educators. Consequently, EFL teachers often face immense pressure, leading to concerns about their psychological well-being. This concern is not merely anecdotal; research indicates that Chinese EFL teachers experience high rates of stress, anxiety, and burnout (Leung and Lee, 2006; Wang et al. 2015). These findings raise critical questions about the overall well-being of Chinese EFL teachers and its impact on both themselves and their students.

Understanding the factors that influence EFL teacher well-being is crucial for their personal well-being and the quality of education they provide (Greenier et al. 2021). Positive EFL teacher well-being has been linked to numerous benefits for students, including increased engagement, academic achievement, and improved social-emotional development (Bardach et al. 2022; Simbula, 2010; Skaalvik and Skaalvik, 2018). Therefore, exploring avenues to promote EFL teacher well-being is not just a matter of individual concern but an investment in the future of English language education itself. This study delves into the potential pathways to well-being for Chinese EFL teachers, focusing on three key variables: mindfulness, growth mindset, and teaching enthusiasm. Each of these variables has garnered increasing attention in recent years, with research highlighting their potential benefits for EFL educators.

Each of these variables has garnered increasing attention in recent years, with research highlighting their potential benefits for EFL educators. Mindfulness, defined as the cultivation of present-moment awareness and non-judgmental acceptance (Kabat-Zinn, 2003), has been demonstrated to reduce stress, anxiety, and depression among teachers, while promoting emotional regulation and job satisfaction (Zarate et al. 2019; Crescentini et al. 2016). Studies conducted within the Chinese EFL context further support these findings, suggesting that mindfulness practices can be particularly beneficial for Chinese EFL teachers navigating the unique pressures of their profession (Cheng et al. 2022; Liu and Du, 2024).

Growth mindset, the belief that intelligence and abilities can be developed through effort, has also been linked to positive outcomes for EFL teachers, including reduced stress, burnout, and anxiety, along with increased self-efficacy, job satisfaction, and emotional regulation (Shoshani, 2021; Nalipay et al. 2022). Research suggests that fostering a growth mindset among EFL educators can enhance their resilience, optimism, and overall well-being (Zeng et al. 2016; Lam et al. 2023). Also, teaching enthusiasm, characterized by passion and excitement for teaching, has been associated with positive student outcomes and reduced teacher stress (Burić and Moe, 2020; Kunter et al. 2011). However, the relationship between enthusiasm and well-being might be complex, potentially influenced by individual and contextual factors (Shao, 2023). Understanding the interplay between these variables and their impact on Chinese EFL teachers holds immense potential for enhancing their well-being and fostering positive learning environments for their students.

While previous research has examined the individual effects of mindfulness, growth mindset, and teaching enthusiasm on EFL teacher well-being, this study contributes to the existing literature by investigating the interconnectedness of these variables and their collective influence on Chinese EFL teachers. Employing a mixed-methods approach that combines quantitative and qualitative data collection, this study offers a comprehensive understanding of how mindfulness and growth mindset might

indirectly enhance EFL teacher well-being through the mediating role of teaching enthusiasm. The quantitative survey explores the relationships between the variables, while the qualitative interview phase provides richer insights into the lived experiences of teachers. This holistic approach fills a crucial gap in the literature and provides novel insights into the mechanisms underlying EFL teacher well-being in the Chinese educational context.

Understanding the factors that contribute to EFL teacher well-being is essential for promoting a positive and sustainable teaching experience within the EFL domain, ultimately benefiting both EFL educators and students. By identifying potential pathways to well-being and elucidating the interplay between mindfulness, growth mindset, and teaching enthusiasm, this study offers actionable insights for EFL educators, policymakers, and researchers. Integrating mindfulness practices and growth mindset interventions into EFL teacher training programs and professional development initiatives can empower Chinese EFL teachers to navigate the challenges of their profession with greater resilience and equanimity. Moreover, fostering teaching enthusiasm can create a ripple effect, enhancing the passion and dedication of EFL educators and fostering positive learning environments for EFL students. By acknowledging and addressing the well-being of Chinese EFL teachers, we can cultivate a more supportive and enriching educational landscape for all stakeholders involved in English language education.

Literature review

Psychological well-being. Psychological well-being, as conceptualized by Ryff and Keyes (1995), extends beyond the mere absence of mental illness, representing a flourishing and positive state of mental health. This holistic perspective encompasses emotional, cognitive, and social dimensions (Ryff, 1989). The influential six-factor model proposed by Ryff (1989) identifies key dimensions, including autonomy, environmental mastery, positive relations with others, personal growth, purpose in life, and self-acceptance. Recognizing the interplay of these factors is pivotal for fostering and maintaining psychological well-being across diverse populations, given its substantial impact on physical health, academic achievement, career success, and social relationships (Diener et al. 2003; Kashdan et al. 2008).

Educators, in particular, face unique challenges that necessitate a focused examination of their psychological well-being (Skaalvik and Skaalvik, 2018). Teacher psychological well-being involves a complex interplay of emotional health, stress management, and personal and professional fulfillment (Gustems-Carnicer and Calderón, 2013). Notably, teachers contend with specific stressors such as workload pressures, challenging student behaviors, lack of autonomy, and insufficient support systems (Simbula, 2010), contributing to teacher burnout characterized by emotional exhaustion, cynicism, and reduced efficacy (Puertas Molero et al. 2019). Despite these challenges, research highlights the positive aspects of the teaching profession, including meaningful student relationships, a sense of purpose, and opportunities for personal growth (Bermejo-Toro et al. 2016).

Recognizing and promoting teacher psychological well-being is paramount, as it directly influences individual teachers, students, and the entire educational system. Engaged and well-supported teachers are more likely to create positive learning environments, fostering effective educational outcomes (Bardach et al. 2022). Conversely, teacher burnout negatively impacts student achievement, school climate, and teacher retention rates (Jeon et al. 2018). Understanding the factors influencing teacher psychological well-being and implementing strategies to enhance it is

essential for an improved educational experience for both teachers and students.

Empirical studies consistently underscore the critical role of teacher well-being in various educational dimensions. Granziera et al. (2023) identified a significant negative association between school-level teacher emotional exhaustion and student achievement, emphasizing the potential detrimental effects of low teacher well-being on student learning outcomes. This aligns with Ilgan et al. (2015), who established a positive link between teacher well-being and the quality of school work life, highlighting the role of supportive work environments in enhancing teacher well-being.

Moreover, Bardach et al. (2022) conducted an integrative review emphasizing the multifaceted influence of teachers' psychological characteristics. Their findings suggest that teachers with positive psychological traits tend to exhibit greater effectiveness, experience higher well-being, have higher retention rates, and foster stronger interpersonal relationships. This underscores the interconnectedness between teacher well-being and various facets of the educational ecosystem. Beyond academic achievements, teacher well-being also impacts student well-being. Sisask et al. (2014) demonstrated that teacher satisfaction and well-being correlate with their readiness to support students facing mental health challenges. Jeon et al. (2018) explored predictors of teacher depression, stress, and emotional exhaustion in early childhood education, emphasizing the need to address factors contributing to teacher well-being for the positive impact it can have on student well-being and development.

A growing body of research highlights the intricate link between various factors and the psychological well-being of language educators (EFL/ESL) (Greenier et al. 2021; Ismail et al. 2023; Nazari and Alizadeh Oghyanous, 2021). Studies suggest that emotion regulation strategies (Greenier et al. 2021; Xiyun et al. 2022) and self-efficacy beliefs (Guo and Jiang, 2023; Xiao et al. 2022) play a significant role in fostering psychological well-being among teachers. Furthermore, research delves into the influence of professional experiences on well-being. Nazari and Alizadeh Oghyanous (2021) explored how teacher experience impacts factors like stress, grit, and turnover intentions, highlighting the dynamic interplay between these elements. The concept of teacher identity also emerges as a factor influencing well-being (Ismail et al. 2023). Additionally, research by Guo and Jiang (2023) explores the positive influence of physical activity on mental health and psychological well-being within the EFL/ESL teacher population.

In conclusion, the extant literature highlights the multifaceted significance of teacher well-being, affecting not only student academic achievement but also influencing the quality of school work life, teacher effectiveness, retention, and student well-being. Further research and initiatives are imperative to promote and sustain teacher well-being, benefiting both educators and learners alike.

Teacher mindfulness. The demanding nature of the teaching profession is well-established, with educators facing high stress levels, burnout, and emotional exhaustion (Hargreaves, 2021). This constant pressure can negatively impact teachers' well-being, relationships with students, and ultimately, their effectiveness in the classroom (Shirley et al. 2020). As a countermeasure, the practice of mindfulness has emerged as a promising tool for promoting teacher resilience and improving educational outcomes (Emerson et al. 2017; Hwang et al. 2017).

Mindfulness refers to the ability to pay attention to the present moment without judgment (Kabat-Zinn, 2003). This practice encourages teachers to become aware of their thoughts, feelings, and bodily sensations in a non-reactive way, fostering greater self-

compassion and emotional regulation (Kabat-Zinn, 2013). Research suggests that mindfulness-based interventions (MBIs) can significantly reduce teacher stress, anxiety, and burnout while improving emotional well-being and job satisfaction (Crane et al. 2010). Furthermore, MBIs have been shown to positively impact teachers' pedagogical practices. Studies demonstrate that mindfulness training enhances teachers' ability to manage challenging classroom situations, cultivate empathy and compassion towards students, and foster a more positive and supportive learning environment (Klingbeil and Renshaw, 2018). By promoting greater self-awareness and emotional regulation, mindfulness empowers teachers to de-escalate conflict, respond constructively to student needs, and create a more conducive atmosphere for learning (Hidajat et al. 2023).

The benefits of teacher mindfulness extend beyond individual well-being and classroom dynamics. Research suggests that mindfulness practices can improve student academic achievement and social-emotional development (de Carvalho et al. 2021). By cultivating a calmer and more present state of mind, teachers can model emotional regulation and positive coping strategies for students, fostering a more mindful and resilient learning community (Taylor et al. 2016).

The studies on teacher mindfulness and psychological well-being provides a comprehensive exploration of the potential benefits of mindfulness practices for educators. Across six studies (Zarate et al. 2019; Crescentini et al. 2016; Braun et al. 2019; Alahari, 2017; Hue and Lau, 2015; Ruijgrok-Lupton et al. 2018; Zhang and Fathi, 2024), the findings consistently suggest that mindfulness interventions hold promise for enhancing the well-being of teachers in various educational settings.

Zarate et al. (2019) contribute valuable meta-analytic evidence, demonstrating that mindfulness training can lead to a range of positive outcomes, including reduced stress, anxiety, and depression, along with increased emotional regulation and job satisfaction among teachers. This overarching positive impact is further supported by studies conducted across diverse contexts, including primary schools, middle schools, and teacher training programs (Crescentini et al. 2016; Braun et al. 2019; Alahari, 2017; Hue and Lau, 2015; Ruijgrok-Lupton et al. 2018).

While the precise mechanisms underlying the relationship between mindfulness and well-being are still under exploration, existing research suggests several potential pathways. Mindfulness practices may cultivate increased self-awareness, emotional acceptance, and coping skills, all of which contribute to greater psychological well-being. Additionally, Braun et al. (2019) highlight the role of mindfulness in improving teacher-student interactions, which can further enhance overall well-being. Moreover, individual differences and contextual factors might moderate the effectiveness of mindfulness interventions, emphasizing the need for more nuanced exploration in future research endeavors.

Recent research suggests a burgeoning interest in the role of mindfulness for EFL educators (Liu and Du, 2024). Studies explore how mindfulness practices can benefit both teachers and students. Huang (2022) investigates the potential of teacher mindfulness and compassion in fostering student enjoyment of learning English. Mindfulness is also examined in relation to teacher well-being. He et al. (2023) explore the connections between mindfulness, teacher growth mindset, grit, and overall well-being. Similarly, Liu and Du (2024) investigate the potential for mindfulness to mitigate teacher burnout. Furthermore, Cicek and Gurbuz (2023) utilize a narrative inquiry approach to explore the personal experiences of an EFL teacher following mindfulness training, offering valuable insights into its practical application. Collectively, these studies highlight the growing recognition of

mindfulness as a potential tool for enhancing both teacher well-being and student learning outcomes within the EFL context.

In conclusion, the synthesis underscores the significant promise of teacher mindfulness for promoting psychological well-being. By integrating mindfulness practices into their lives, educators have the potential to mitigate stress, enhance emotional regulation, and create a more positive and sustainable teaching experience. However, further research is warranted to delve deeper into the underlying mechanisms, explore variations in individual and contextual factors, and investigate long-term impacts and effective implementation strategies to maximize the benefits of mindfulness for teacher well-being and educational outcomes.

Teaching enthusiasm. Enthusiastic and passionate teachers play a pivotal role in shaping students' learning experiences and influencing academic outcomes. Moving beyond the mere transmission of information, their dynamic energy cultivates engagement, sparks curiosity, and motivates young minds to explore and learn (Burić and Moe, 2020). Defining enthusiasm extends beyond observable actions, encapsulating a genuine passion for the subject matter, a belief in students' potential, and a contagious energy that sparks curiosity and excitement (Kunter et al. 2011; Moe and Katz, 2022). Effective enthusiasm, research suggests, emerges from a profound understanding of the subject matter, coupled with a desire to share that knowledge and ignite a similar passion in others (Keller et al. 2013).

Teacher enthusiasm's impact transcends the boundaries of the classroom environment. Numerous studies have demonstrated a positive correlation between enthusiastic teaching and various student outcomes. These include heightened motivation and engagement, as enthusiastic teachers capture students' attention, foster intrinsic motivation, and encourage active participation in learning activities (Skaalvik and Skaalvik, 2014). Moreover, enthusiastic teaching correlates with improved academic achievement, with engaging lessons led by passionate educators facilitating deeper learning and better academic performance (Keller et al. 2016). The positive influence extends to the overall classroom climate, as enthusiastic teachers contribute to a more positive and supportive learning environment, reducing students' anxiety and fostering a sense of belonging (Keller et al. 2014).

One of the profound impacts of teacher enthusiasm lies in the development of positive attitudes towards learning. By modeling passion and curiosity, enthusiastic teachers instill a love for learning in their students, encouraging them to become lifelong learners (Lazarides et al. 2019). This transformative influence underscores the significance of cultivating and understanding teacher enthusiasm for the betterment of both educators and learners. The literature on teaching enthusiasm and psychological well-being unveils a nuanced relationship between educators' passion for teaching and their mental and emotional health. Studies by Shao (2023) and Burić and Moe (2020) illuminate a positive association between teaching enthusiasm and well-being, suggesting that passionate educators may experience lower stress levels and greater job satisfaction, thereby contributing positively to their overall psychological health.

However, this connection operates within a complex interplay with other factors influencing well-being. Kaya and Çenesiz (2020) highlight the significance of life satisfaction and intrinsic motivation in predicting the well-being of pre-service teachers, indicating that broader factors beyond classroom passion contribute to psychological health. Furthermore, Erturan-Ilker (2014) demonstrates the impact of contextual factors, such as the physical education setting, on both motivation and well-being, emphasizing the need for a nuanced understanding in diverse

situations. Bhat and Naik (2016) contribute by exploring the relationship between intrinsic motivation and well-being in students, suggesting potential parallels with teachers, where inherent enjoyment in teaching might similarly contribute to positive mental health.

Moreover, existing studies on teacher mindfulness and teaching enthusiasm delve into the relationship between mindfulness practices and teaching enthusiasm, characterized by passion and excitement for teaching. Drawing insights from five studies, the findings collectively suggest that mindfulness practices hold the potential to contribute to the development of a more enthusiastic and engaging teaching presence. Key concepts emerging from these studies underscore the potential positive influence of mindfulness on teaching enthusiasm. Huang (2022) highlights how mindful EFL teachers create a more enjoyable learning environment for students, suggesting a link between mindfulness and fostering enthusiasm. Similarly, Moyano et al. (2023) demonstrate the positive impact of mindfulness on teacher well-being and engagement, indirectly enhancing enthusiasm in the classroom. Additionally, Molloy Elreda et al. (2019) and Jennings (2015) suggest that mindfulness can cultivate emotional supportiveness and compassion in teachers, potentially leading to a more positive and engaging teaching style. Case studies presented by Sherretz (2011) further support the idea that mindful teachers exhibit enthusiasm, implying a practical connection.

While the exact mechanisms are still under exploration, researchers propose that mindfulness may foster enthusiasm by reducing stress and anxiety, creating a more positive and energetic teaching presence (Moyano et al. 2023), improving emotional regulation, enabling teachers to manage challenges and maintain enthusiasm (Jennings, 2015), and enhancing self-awareness and compassion, leading to a more positive and engaging connection with students (Molloy Elreda et al. 2019).

Teacher enthusiasm emerges as a critical factor influencing various aspects of the EFL learning environment (Liu et al. 2021). Studies highlight the positive impact of teacher enthusiasm on student outcomes. Liu et al. (2021) demonstrate a connection between teacher enthusiasm and student language achievement. Also, teacher enthusiasm appears to influence other aspects of the learning environment. Greenier et al. (2023) explore the role of teacher enthusiasm in fostering creative thinking skills within the EFL context. Their findings suggest that enthusiastic teachers create a more conducive atmosphere for student creativity. Furthermore, Cao and Zhang (2023) delve into the relationship between teacher enthusiasm and work engagement among EFL teachers. Their study suggests that teachers who experience a strong sense of value congruence (alignment between personal values and workplace values) are more likely to be engaged in their work, particularly when coupled with high levels of teacher enthusiasm. Collectively, these studies showcase the multifaceted importance of teacher enthusiasm within the EFL classroom. Enthusiastic teachers not only contribute to improved student achievement but also appear to foster a more creative and engaging learning environment, potentially impacting both student and teacher well-being (Zhang et al., 2023).

Teacher growth mindset. The concept of a growth mindset, introduced by Carol Dweck in 2006, revolutionized our understanding of intelligence and abilities, positing that they are not fixed traits but can be developed through effort and perseverance (Dweck, 2006). Individuals with a growth mindset see challenges as opportunities for learning and view effort as a crucial element for success (Dweck and Yeager, 2019). In contrast, those with a fixed mindset believe in the innate nature of their intelligence and

abilities, often avoiding challenges due to the fear of undermining their perceived capabilities (Dweck, 2006).

Research underscores the transformative impact of a growth mindset on various aspects of individual development and achievement. Students embracing a growth mindset exhibit higher engagement, persist longer in challenging tasks, and achieve better academically compared to those with a fixed mindset (Blackwell et al. 2007). Moreover, individuals with a growth mindset display enhanced motivation and resilience, attributing failures to effort and strategy rather than inherent limitations, fostering increased perseverance (Dweck et al. 1995). Importantly, studies suggest a positive association between a growth mindset and overall well-being, including higher life satisfaction, self-esteem, and lower levels of anxiety and depression (Yeager and Dweck, 2012).

Given these potential benefits, numerous interventions have been developed to cultivate a growth mindset across various contexts, including education, workplaces, and athletics (Yeager and Dweck, 2020). These interventions typically involve exposure to the concept of growth mindset, opportunities to experience the benefits of effort and learning, and the creation of positive and supportive environments. In the dynamic landscape of education, characterized by evolving educational frameworks and diverse student needs, a growth mindset is particularly advantageous for teachers (Nalipay et al. 2021). Teachers embracing a growth mindset perceive challenges as avenues for learning and development, welcoming feedback as a tool for improvement rather than an indictment of inadequacy (Yeager and Dweck, 2020). This stands in contrast to a fixed mindset, where educators may perceive their abilities as static, potentially leading to stagnation and disengagement.

Adopting a growth mindset offers several advantages for educators, according to research. Teachers with a growth mindset exhibit enhanced resilience and well-being, managing stress effectively, navigating setbacks with optimism, and maintaining a positive outlook (Yeager et al. 2022). Moreover, belief in the capacity for improvement motivates teachers to actively seek new learning opportunities, engage in professional development, and experiment with innovative teaching methods (Fronozo et al. 2022). Importantly, teachers with a growth mindset contribute to improved student outcomes by creating challenging and engaging learning environments, fostering student motivation, resilience, and academic achievement (Seaton, 2018).

The intersection between a teacher's growth mindset and their psychological well-being is a consistent and positive connection, as illuminated by a body of research spanning six studies (Shoshani, 2021; Nalipay et al. 2022; Zeng et al. 2016; Zeng et al. 2019; Whittington et al. 2017; Lam et al. 2023). This association reveals tangible outcomes, including reduced stress, anxiety, and burnout, coupled with increased self-efficacy, job satisfaction, and emotional regulation among educators.

Extending across diverse educational contexts, from general teaching environments to early childhood settings and even into the unique domain of veterinary education, these studies consistently demonstrate the positive impact of a growth mindset on teacher well-being (Shoshani, 2021; Nalipay et al. 2022; Zeng et al. 2016; Zeng et al. 2019; Whittington et al. 2017; Lam et al. 2023). Collectively, these findings suggest that fostering a belief in the malleability of intelligence and abilities can significantly contribute to a more positive and fulfilling professional experience for teachers.

While the exact mechanisms underlying this connection continue to be explored, existing research posits several potential pathways through which a growth mindset may promote well-being (Zeng et al. 2016; Shoshani, 2021; Nalipay et al. 2022). One such mechanism involves encouraging perseverance in the face of

challenges, empowering teachers to view setbacks as opportunities for growth. Additionally, fostering a sense of control and autonomy emerges as a crucial factor, allowing teachers to feel more agency over their professional lives. Furthermore, enhancing coping skills and stress management proves to be another potential mechanism, equipping educators with the tools to navigate the inevitable challenges in their profession.

Intriguingly, the exploration of teacher growth mindset extends beyond its impact on well-being to investigate its relationship with teaching enthusiasm, characterized by passion and excitement for teaching. While limited in quantity, the available studies in this specific area suggest a promising connection that merits further investigation.

Key themes emerging from this line of research underscore the potential influence of a growth mindset on teaching enthusiasm. Nalipay et al. (2021) propose a link between a growth mindset and increased motivation and engagement in teaching, indicating a potential translation into more enthusiastic teaching practices. Building on this, Vermote et al. (2020) emphasize the role of teacher motivation in shaping teaching style, suggesting that a growth mindset could foster a more motivating and engaging approach in the classroom. Additionally, Seaton (2018) argues that empowering teachers with a growth mindset can enhance their sense of agency and control, potentially leading to greater enthusiasm and self-efficacy in their teaching practices.

A bulk of research emphasizes the significance of growth mindset within the EFL teaching context (Zhang et al. 2022). These studies explore the multifaceted influence of growth mindset on both teachers and students. On the teacher side, research investigates the connections between growth mindset and various positive outcomes. Liu et al. (2023) examine the potential for a growth mindset to contribute to teacher work engagement, enjoyment, and even grit. Similarly, Zarrinabadi et al. (2023) explore how a growth mindset can act as a buffer against teacher burnout and contribute to a stronger professional identity. Zhang et al. (2022) delve deeper, investigating the interplay between growth mindset, ideal L2 self (desired second language proficiency), and student boredom within the EFL context. Beyond teacher well-being, Dong (2024) explores the concept of "meta-lay theories," students' beliefs about their teachers' beliefs in their potential for improvement. This study suggests that students who perceive their teachers holding a growth mindset are more likely to develop a growth mindset themselves, potentially impacting their online self-regulation strategies. Taken together, these studies highlight the potential of growth mindset as a powerful tool for fostering positive outcomes in the EFL classroom, impacting both teachers and students.

In summary, the dynamic relationship between teacher growth mindset, psychological well-being, and teaching enthusiasm forms a compelling area of research that not only enhances our understanding of teacher development but also holds implications for teacher training, professional development, and ultimately, the quality of education delivered in classrooms.

The hypothesized model. Building upon existing literature, this study proposes a model examining the potential influences of teacher mindfulness, growth mindset, and teaching enthusiasm on the psychological well-being of Chinese EFL teachers. This model posits direct and indirect relationships between these variables:

Firstly, drawing on a growing body of research across diverse populations, including studies specifically focused on Chinese educators, we hypothesize a direct and positive relationship between teacher mindfulness and their psychological well-being.

Mindfulness practices, characterized by cultivating present-moment awareness and non-judgmental acceptance, have been demonstrably linked to tangible benefits for teachers, including reduced stress, anxiety, and depression (Alahari, 2017; Braun et al. 2019; Crescentini et al. 2016), alongside increased emotional regulation, self-compassion, and job satisfaction (Hue and Lau, 2015; Ruijgrok-Lupton et al. 2018; Zarate et al. 2019). These positive outcomes directly contribute to improved psychological well-being, suggesting a robust and well-established relationship between mindfulness and well-being among Chinese EFL teachers.

Secondly, similar to mindfulness, a growth mindset, characterized by the belief in one's ability to learn and develop, is hypothesized to be directly related to improved psychological well-being. This aligns with research findings across various educational contexts (Lam et al. 2023; Nalipay et al. 2022; Shoshani, 2021; Whittington et al. 2017; Zeng et al. 2016; Zeng et al. 2019), suggesting that teachers with a growth mindset tend to experience lower stress, anxiety, and burnout, while exhibiting higher self-efficacy, job satisfaction, and emotional regulation (Lam et al. 2023; Whittington et al. 2017; Zeng et al. 2019).

Furthermore, the model explores the mediating role of teaching enthusiasm in the relationships between mindfulness and growth mindset with psychological well-being. Research suggests that mindfulness practices may indirectly enhance well-being by fostering teaching enthusiasm (Huang, 2022; Moyano et al. 2023). This could occur through reduced stress and anxiety, leading to a more positive and energetic teaching presence (Moyano et al. 2023), and improved emotional regulation, allowing teachers to navigate challenges and maintain enthusiasm (Huang, 2022; Jennings, 2015; Molloy Elreda et al. 2019; Moyano et al. 2023; Sherretz, 2011). Additionally, mindfulness may cultivate self-awareness and compassion, leading to a more positive and engaging connection with students, further contributing to teacher enthusiasm (Molloy Elreda et al. 2019). Similarly, a growth mindset is hypothesized to indirectly promote well-being through its influence on teaching enthusiasm. Teachers with a growth mindset tend to be more motivated and engaged in their work (Nalipay et al. 2021; Seaton, 2018; Vermote et al. 2020), which could translate into more enthusiastic teaching practices. Additionally, a growth mindset fosters a sense of agency and control, potentially leading to greater self-efficacy and enthusiasm in the classroom (Seaton, 2018). Therefore, teaching enthusiasm is hypothesized to act as a mediator, transmitting the positive effects of both mindfulness and growth mindset on the psychological well-being of Chinese EFL teachers.

In addition to the quantitative survey, a qualitative interview phase will be conducted to gain deeper insights into the lived experiences of teachers and explore the "how" behind the hypothesized relationships. This will provide a richer understanding of the complex interplay between these variables and their impact on well-being.

Based on the hypothesized model and the study's purpose, this study investigates the following research questions:

RQ1: Does mindfulness directly relate to psychological well-being in Chinese EFL teachers?

RQ2: Does growth mindset directly relate to psychological well-being in Chinese EFL teachers?

RQ3: Does teaching enthusiasm mediate the relationship between mindfulness and/or growth mindset and psychological well-being in Chinese EFL teachers?

RQ4: How do Chinese EFL teachers describe their experiences of mindfulness, growth mindset, teaching enthusiasm, and well-being, and how do these experiences interrelate in their daily teaching lives?

Methods

Participants and procedures. This mixed-methods study employed a two-phased approach to explore the relationships between mindfulness, growth mindset, teaching enthusiasm, and well-being among Chinese EFL teachers. A total of 268 EFL teachers participated in the quantitative phase of the study. Participants were randomly selected from twelve public schools across three diverse provinces in China to ensure a diverse and representative sample of the population. These provinces were chosen to reflect a wide range of socio-economic backgrounds and educational contexts, including both urban and rural settings.

A power analysis was conducted a priori using G*Power software (Faul et al. 2007) to determine a sufficient sample size for the quantitative phase of the study. Based on a medium effect size ($f^2 = 0.15$), power of .80, and alpha level of .05, a minimum sample size of 221 participants was required for multiple regression analysis with four predictors (mindfulness, growth mindset, teaching enthusiasm) and one outcome variable (well-being). The achieved sample size of 268 participants provided adequate power to detect statistically significant relationships between the studied variables, even after accounting for potential attrition.

The selection process involved a stratified random sampling method to achieve a balanced representation of teachers based on gender, age, and teaching experience. School administrators provided lists of eligible teachers, from which participants were randomly selected within each stratum. To be eligible for the study, participants had to be currently employed full-time as secondary school teachers (grades 7–12), possess at least one year of teaching experience at the secondary level, be fluent in English, and demonstrate a willingness to participate in the study by completing all surveys. The sample was diverse in terms of age, gender, geographic location (rural vs. urban), and years of teaching experience. Specifically, 63% of the participants were female (169 teachers) and 37% were male (99 teachers). Their ages ranged from 23 to 58 years old, with an average age of 35. In terms of location, 45% (121 teachers) came from urban areas, while 55% (147 teachers) resided in rural areas. Their teaching experience varied between 1 and 15 years, with an average of 7 years. Data collection for the quantitative phase was conducted using an online survey platform. The survey link and information about the study were distributed to the participating schools through official channels with the assistance of school administrators. The survey platform ensured anonymity and confidentiality of participants' responses. Participation in the study was completely voluntary, and informed consent was obtained from all participants before they began the survey.

Following the quantitative survey, a qualitative phase was undertaken to gain deeper insights into the lived experiences of EFL teachers and explore the quantitative findings in greater detail. For this phase, a purposive sampling method was used to select a diverse subset of 12 teachers from the initial quantitative sample. These teachers were chosen to reflect a range of experiences and backgrounds, including different geographic regions (urban and rural), grade levels (primary, middle, and high school), and years of teaching experience. This approach ensured that the qualitative data would provide a rich and nuanced understanding of the broader trends observed in the quantitative phase.

Informed consent was obtained from all participants prior to commencing the interviews, which were conducted in Mandarin Chinese to facilitate open and comfortable communication. Confidentiality was assured throughout the research process. The semi-structured interview guide ensured consistency while allowing for exploration of emergent themes. Interviews lasted

approximately 60–90 min and were audio-recorded with permission.

Instruments. To assess participants' psychological well-being, we utilized the well-established Psychological Well-being Scale developed by Ryff and Keyes (1995). Comprising 18 items, this scale gauges positive relationships with others, personal growth, self-acceptance, purpose in life, autonomy, and environmental mastery. Respondents rated their agreement on a seven-point Likert scale, ranging from strongly disagreed (1) to strongly agreed (7). Previous research has demonstrated the widespread applicability and reliability of this scale (Ryff and Keyes, 1995). The reliability and validity of this scale has been approved in EFL contexts (Tang and Zhu, 2024). In the current study, we further confirmed the validity of the measurement model by conducting a confirmatory factor analysis (CFA).

For evaluating mindfulness, we employed the Mindful Attention Awareness Scale (MAAS), as developed by Brown and Ryan (2003). The MAAS consists of 15 items, each assessed on a six-point Likert scale ranging from most always (1) to almost never (6). Sample statements include items like "I work automatically on tasks, do not know what I am doing." This scale has been widely utilized in research focusing on mindfulness. The effectiveness of this scale in measuring mindfulness has been verified by prior EFL researchers (Fathi et al. 2023). To ensure the construct validity of the MAAS in our study, we conducted a CFA and examined convergent and discriminant validity.

Teacher enthusiasm was evaluated using the Teaching Enthusiasm Scale, originally designed by Kunter et al. (2011) to measure the enthusiasm of in-service instructors. This scale employs a Likert-type format, allowing participants to indicate their level of agreement with statements on a scale (e.g., 1 = Strongly Disagree to 5 = Strongly Agree). A sample item from the scale is, "I really enjoy teaching in this class." This scale has been previously used and re-validated for the EFL context (Greenier et al. 2023). We further confirmed the factor structure of the Teaching Enthusiasm Scale using CFA in the current study.

To gauge the growth mindset of Chinese teachers, we employed the Growth Mindset Scale, adopting the eight items from Dweck's (2006) mindset questionnaire. Respondents rated their agreement on a 6-point Likert scale, ranging from 1 (strongly disagree) to 6 (strongly agree). A representative item from the scale is "No matter how much intelligence you have, you can always change it quite a bit." This self-report scale has been widely used in research exploring the concept of a growth mindset. The reliability and validity of this scale has been verified in EFL contexts (Liu et al. 2023). Similar to the other scales, the construct validity of the Growth Mindset Scale was assessed in the current study through CFA along with convergent and discriminant validity analyses.

In addition to the quantitative instruments, a semi-structured interview approach was chosen to explore the lived experiences of EFL teachers. This method provided flexibility to delve into specific aspects of mindfulness, growth mindset, teaching enthusiasm, and well-being while maintaining a focus on core research questions. Participants were encouraged to share their unique perspectives and experiences within a thematic framework.

Purposive sampling was utilized to recruit a sample ($n = 12$) of EFL teachers with diverse experiences and backgrounds. These teachers had previously completed the quantitative survey. The target population encompassed teachers from various geographical regions (urban and rural), grade levels (primary, middle, and high school), and with a range of teaching experience. Inclusion criteria ensured participants were currently employed full-time,

English teachers, and willing to provide detailed accounts of their experiences.

Informed consent was obtained from all participants prior to commencing the interviews, which were conducted in Mandarin Chinese to facilitate open and comfortable communication. Confidentiality was assured throughout the research process. The semi-structured interview guide ensured consistency while allowing for exploration of emergent themes. Interviews lasted ~60–90 min and were audio-recorded with permission.

The semi-structured interview guide included the following questions:

1. Can you describe any strategies you use to manage stress or stay focused in the classroom?
2. How do you view your own development as a teacher? How do you encourage your students to learn and grow?
3. What motivates you to come to work each day? What aspects of teaching bring you the most joy?
4. Can you tell me about how your work as a teacher impacts your overall well-being?

Data analysis. The analysis employed a two-phase structural equation modeling approach (Kline, 2016) within the SPSS and AMOS frameworks (versions 23 and 26, respectively).

Initial data exploration involved evaluating skewness, kurtosis, and descriptive statistics to ensure data suitability for further analysis. Subsequently, the CFA phase assessed the measurement model's fit using established indices. A good fit was indicated by RMSEA below 0.05 (Browne and Cudeck, 1993), SRMR less than 0.08 (Kline, 2015), chi-square/df ratio within 1–3, CFI exceeding 0.95 (Hu and Bentler, 1999), GFI exceeding 0.90, and TLI exceeding 0.90 (Kline, 2015).

Following a successful CFA, the structural model was tested. Bootstrapping with 5000 resamples (Shrout and Bolger, 2002) and confidence interval assessment (Hayes, 2013) were employed to evaluate the significance of indirect effects. The detailed results of these analyses, including specific values for each index and path coefficients, will be presented in subsequent sections tailored to the findings.

Thematic analysis was employed to analyze the transcribed interview data. Recordings were transcribed verbatim and translated into English by a bilingual researcher with expertise in qualitative research methods (Braun and Clarke, 2006). A rigorous coding process was then implemented, involving line-by-line analysis to identify recurring themes and patterns related to the research focus (Saldana, 2013).

The initial step in this process involved breaking down the data into meaningful segments and assigning codes to these segments. Each line of the transcribed data was meticulously reviewed, and initial codes were assigned based on the content. To ensure consistency in the coding process, a codebook was developed to document the codes and their definitions. This codebook was refined iteratively, incorporating feedback from a second coder to maintain clarity and accuracy.

To enhance the reliability of the analysis, a second researcher independently coded a subset of the data, specifically 20%. The results of this double coding were then compared, and any discrepancies were discussed and resolved through consensus, which led to further refinement of the codebook. Following the initial coding, the codes were examined for similarities and differences, and related codes were grouped into categories, which were subsequently organized into broader themes. The validation of these themes was achieved through a process of triangulation, which involved cross-checking the themes with the quantitative findings and seeking feedback from the participants. Member

Table 1 Descriptive statistics.

Variables	Mean	SD	Skewness	Kurtosis	Cronbach's alpha
1. Mindfulness	2.96	0.48	-0.12	0.10	0.89
2. growth mindset	3.16	0.61	-0.07	0.11	0.84
3. enthusiasm	3.56	0.69	-0.08	0.13	0.87
4. well-being	3.79	0.56	-0.06	0.10	0.91

Table 2 Correlations among the constructs.

Variables	1	2	3	4
1. Mindfulness	1.00			
2. growth mindset	0.43**	1.00		
3. enthusiasm	0.39**	0.39**	1.00	
4. well-being	0.53**	0.33**	0.54**	1.00

**p < 0.01.

checking was conducted by sharing the preliminary themes with a few interviewees to ensure that the themes accurately represented their experiences.

Finally, a thematic map was developed to illustrate the interrelationships between the identified themes. This visual representation facilitated an understanding of the connections and hierarchies among the themes, providing a comprehensive view of the qualitative data. This systematic approach to coding and theme validation ensured the credibility and trustworthiness of the qualitative findings, which provided deeper insights into the lived experiences of EFL teachers and complemented the quantitative findings from the survey data.

Results

This section presents the findings from the mixed-methods study investigating the influence of mindfulness, growth mindset, and teaching enthusiasm on the psychological well-being of Chinese EFL teachers. The quantitative analysis revealed significant positive relationships between all three variables and psychological well-being. In simpler terms, teachers who reported higher levels of mindfulness, growth mindset, and teaching enthusiasm also displayed greater well-being. The following sections delve into the detailed statistical analyses and qualitative interview findings that shed further light on these relationships.

Quantitative results. To address potential issues with missing data, we employed the Expectation-Maximization algorithm, a widely used technique for data imputation (Kline, 2015). Following imputation, we assessed the data for normality, a key assumption for the subsequent analysis methods employed in this study. Table 1 summarizes the descriptive statistics for the four latent variables (mindfulness, growth mindset, teaching enthusiasm, and well-being) and their corresponding indicators. As shown in the table, the skewness values for all variables fall within the acceptable range of ±2, and the kurtosis values remain below ±7. These findings suggest that the data adheres to the assumption of multivariate normality required for further analysis (Finney and DiStefano, 2006).

As shown in Table 1, the mean scores for all variables were above 3, indicating generally positive dispositions toward mindfulness (M = 2.96), growth mindset (M = 3.16), teaching enthusiasm (M = 3.56), and well-being (M = 3.79) in the sample. The standard deviations ranged from 0.48 to 0.69, indicating moderate variability within each construct (Mindfulness: SD = 0.48, Growth Mindset: SD = 0.61, Enthusiasm: SD = 0.69, Well-being: SD = 0.56). Skewness and kurtosis values close to zero for all variables suggested a normal distribution in the data (Mindfulness: Skewness = -0.12, Kurtosis = 0.10; Growth Mindset: Skewness = -0.07, Kurtosis = 0.11; Enthusiasm: Skewness = -0.08, Kurtosis = 0.13; Well-being: Skewness = -0.06, Kurtosis = 0.10). Internal consistency, measured by Cronbach's alpha, demonstrated strong reliability for all variables (Mindfulness: α = 0.89, Growth Mindset: α = 0.84, Enthusiasm: α = 0.87, Well-being: α = 0.91), indicating that the items within

Table 3 Convergent and divergent validity.

Variables	AVE	CR	1	2	3	4
1. Mindfulness	0.63	0.86	0.79			
2. growth mindset	0.52	0.89	0.43**	0.72		
3. enthusiasm	0.69	0.91	0.39**	0.39**	0.82	
4. well-being	0.58	0.83	0.53**	0.33**	0.54**	0.76

AVE average variance extracted, CR composite reliability, bold font numbers are square roots of the AVE; off diagonals are correlation confidence. **p < 0.001.

each scale were highly reliable and effectively measured the intended constructs.

Table 2 delves into the relationships between the core variables of our study. As shown in Table 2, a positive and significant correlation was observed between mindfulness and both growth mindset (r = 0.43, p < 0.01) and well-being (r = 0.53, p < 0.01). This suggests that teachers with higher levels of mindfulness tend to exhibit a stronger growth mindset and experience greater well-being. Similarly, growth mindset displayed positive and significant correlations with both teaching enthusiasm (r = 0.39, p < 0.01) and well-being (r = 0.33, p < 0.01). This implies that teachers with a growth mindset are more likely to report higher levels of enthusiasm and well-being.

Not surprisingly, teaching enthusiasm exhibited a strong and significant positive correlation with well-being (r = 0.54, p < 0.01). This reinforces the idea that passionate and enthusiastic teachers tend to experience greater well-being in their professional lives.

Table 3 reinforces the quality of our measures through both convergent and discriminant validity analyses. Convergent validity shines through high average variance extracted (AVE) values, exceeding 0.50 for all constructs. This, as recommended by Fornell and Larcker (1981), indicates that the majority of variance captured by each measure reflects its intended meaning. Further bolstering this finding are strong composite reliability (CR) scores, exceeding 0.60 (Bagozzi and Yi, 1988), signifying excellent internal consistency and reliability within each construct.

Discriminant validity is equally well-established. The square root of AVE for each construct (bolded numbers in Table 3) surpasses the corresponding inter-construct correlations. This key finding suggests that each construct shares more variance with its own indicators than with others, solidifying strong discriminant validity as suggested by Fornell and Larcker (1981). Overall, the evidence presented in Table 3 provides robust support for the quality of our measures. Both convergent and discriminant validity are well-established, strengthening our confidence in the subsequent analysis and interpretation of the findings. This ensures that our results accurately reflect the intended constructs within the context of our study.

In our exploration, the measurement model comprised four latent constructs: mindfulness, growth mindset, teaching

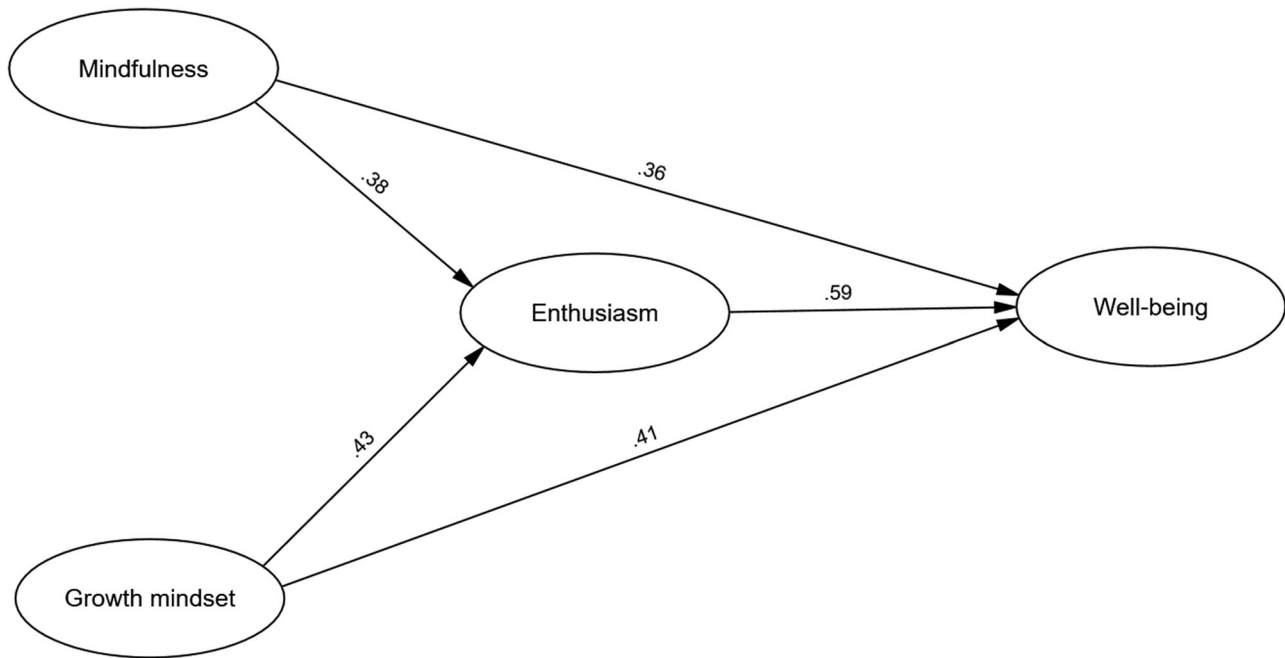


Fig. 1 The final model of teacher well-being.

Table 4 The SEM results.

Path	Standardized path coefficient (β)	Estimate (95% CI)	p value	Effect type
Mindfulness → well-being	0.36	[0.25, 0.47]	<0.001	Direct
Growth mindset → well-being	0.41	[0.30, 0.52]	<0.001	Direct
Enthusiasm → well-being	0.59	[0.50, 0.68]	<0.001	Direct
Mindfulness → enthusiasm → well-being	0.22	[0.15, 0.29]	<0.01	Indirect
Growth mindset → enthusiasm → well-being	0.25	[0.18, 0.32]	<0.01	Indirect
Mindfulness → well-being	0.58	[0.50, 0.66]	<0.001	Total
Growth mindset → well-being	0.66	[0.58, 0.74]	<0.001	Total

enthusiasm, and well-being among Chinese teachers. Each construct was linked to multiple observed indicators, creating a comprehensive model for analysis. Employing the structural equation modeling approach with maximum likelihood estimation in AMOS (version 23.0), we conducted a CFA to assess the validity of the measurement model.

The outcomes revealed a favorable fit to the dataset ($\chi^2 = 520.75$; $df = 185$; $\chi^2/df = 2.81$; $p < 0.001$; $RMSEA = 0.047$; $SRMR = 0.043$; $CFI = 0.972$; $TLI = 0.957$). Following this validation, we introduced a common method factor into the model to investigate potential common method variance. The results indicated that the revised measurement model did not exhibit significant improvement ($\chi^2 = 600.25$; $df = 165$; $\chi^2/df = 3.636$; $RMSEA = 0.063$; $SRMR = 0.036$; $CFI = 0.957$; $TLI = 0.944$). Notably, the changes in $RMSEA$ and $SRMR$ were each less than 0.05, while the alterations in CFI and TLI were each less than 0.1. These marginal changes suggest that the inclusion of the common method factor did not substantially enhance the model, indicating a lack of pronounced common method variance in our measurement model.

Following the validation of the measurement model, we proceeded to test the structural model. The fit indices indicated a robust fit to the data ($\chi^2 = 310.75$, $df = 160$, $\chi^2/df = 1.94$, $p = 0.00$; $CFI = 0.963$, $TLI = 0.952$, $RMSEA = 0.031$, 90% CI for $RMSEA = [0.024, 0.041]$), confirming the significance of all hypothesized paths in the model (see Fig. 1) at a significance level of $p < 0.05$.

Table 4 sheds light on the intricate interplay between mindfulness, growth mindset, teaching enthusiasm, and their collective influence on teachers' well-being. The analysis revealed both significant direct and indirect effects, providing a comprehensive understanding of the pathways through which these variables contribute to teachers' psychological well-being.

As indicated in Table 4, a positive and significant direct effect was found between mindfulness and well-being ($\beta = 0.36$, $p < 0.001$, 95% CI [0.25, 0.47]), indicating that higher levels of mindfulness directly contribute to greater well-being among teachers. Likewise, a significant and positive direct effect emerged for growth mindset on well-being ($\beta = 0.41$, $p < 0.001$, 95% CI [0.30, 0.52]). This suggests that teachers with a stronger growth mindset experience higher levels of well-being independent of other factors. The strongest direct effect was observed between teaching enthusiasm and well-being ($\beta = 0.59$, $p < 0.001$, 95% CI [0.50, 0.68]). This finding highlights the crucial role that passion and enjoyment in teaching play in fostering teachers' well-being.

Beyond its direct impact, mindfulness also exerted a significant indirect effect on well-being through its influence on teaching enthusiasm ($\beta = 0.22$, $p < 0.001$, 95% CI [0.15, 0.29]). This suggests that mindfulness practices can contribute to increased teacher enthusiasm, which in turn leads to greater well-being. Similarly, growth mindset demonstrated a significant indirect effect on well-being mediated by teaching enthusiasm ($\beta = 0.25$, $p < 0.001$, 95% CI [0.18, 0.32]). This finding implies that a growth

mindset can foster teacher enthusiasm, ultimately leading to higher levels of well-being.

The total effect of mindfulness on well-being, accounting for both direct and indirect effects, was significant and positive ($\beta = 0.58$, $p < 0.001$, 95% CI [0.50, 0.66]). This suggests that mindfulness plays a substantial role in promoting well-being among teachers. Likewise, the total effect of growth mindset on well-being was significant and positive ($\beta = 0.66$, $p < 0.001$, 95% CI [0.58, 0.74]). This emphasizes the importance of fostering a growth-oriented mindset for enhancing teachers' well-being.

The findings presented in Table 4 paint a compelling picture of the interconnected nature of mindfulness, growth mindset, teaching enthusiasm, and their multifaceted contributions to teacher well-being. While each variable exerts a direct positive influence, the indirect effects highlight the cascading impact of mindfulness and growth mindset through their ability to cultivate teaching enthusiasm. This comprehensive understanding underscores the potential for interventions targeting these variables to holistically promote teacher well-being and create a more fulfilling and sustainable teaching experience.

Qualitative results. Building upon the quantitative analysis, which revealed significant relationships between mindfulness, growth mindset, teaching enthusiasm, and well-being in Chinese EFL teachers, a qualitative phase was undertaken to gain deeper insights into these experiences. Thematic analysis of interview data yielded several key themes that resonated with the quantitative findings, offering a richer understanding of how these concepts manifest in the daily lives of teachers across various educational settings.

Theme 1: cultivating mindfulness for focus and composure. A prominent theme emerged around the positive influence of practices that helped teachers stay calm and focused in the classroom. Interestingly, these practices weren't always labeled as "mindfulness," but the benefits were undeniable. Li Mei (10 years of experience as a high school English teacher), for instance, discovered the power of deep breathing independently. "There were days when the classroom felt like a whirlwind, especially with large class sizes," she shared. "Now, I take a few slow breaths throughout the day, especially when things get hectic. It helps me center myself and focus on what matters most - my students." In contrast, Wei Chen (middle school teacher) highlighted the potential of formal training. He explained, "Sometimes, things don't go according to plan, and it's easy to get flustered, particularly when dealing with particularly energetic classes. But taking a moment to just breathe and collect myself, as I learned in a workshop on stress management, allows me to handle the situation more calmly and effectively." Wei Chen's experience underscores the value of incorporating mindfulness practices into formal teacher training programs. Further enriching the narrative, Sun Ming (veteran high school teacher, 20+ years) offered a perspective honed over a long career. "Over the years, I've learned the importance of finding moments of quiet reflection throughout the day," he reflected. "Even a few minutes of mindful breathing can make a big difference in managing stress and staying focused on the task at hand." Sun Ming's experience suggests that some teachers develop mindfulness practices organically over time. These diverse experiences resonate with the quantitative finding of a positive association between mindfulness and well-being. The qualitative data, therefore, suggests that mindfulness practices, regardless of how they are acquired, can be instrumental in promoting teacher well-being in the classroom.

Theme 2: growth mindset fosters sustained motivation. Another key theme emerged around growth mindset as a critical factor in sustaining motivation and enthusiasm for teaching. Teachers highlighted the importance of believing in their own ability and that of their students to learn and develop. However, the interviews also revealed interesting variations in how teachers developed this growth mindset.

Nurturing growth through experience. Wang Tao (middle school English teacher), for example, described how his growth mindset stemmed from navigating challenges in the classroom: "There will be times when a lesson flops, or a student struggles to grasp a concept," he explained. "But the beauty is, we can all learn and improve. That keeps me motivated to try new things and find creative ways to explain things, especially for students who might need additional support." Wang Tao's experience exemplifies how overcoming obstacles and witnessing student progress can foster a growth mindset. The fast-paced environment of middle school, with its diverse learning needs, can present these challenges and opportunities for growth on a regular basis.

Growth mindset through professional development. In contrast, Zhang Ling (university English lecturer, 15 years of experience) attributed her growth mindset to professional development opportunities: "Exposure to workshops on growth mindset pedagogy has been instrumental," she shared. "It's helped me reframe challenges as opportunities for learning and improvement, not just for my students, but for myself as well." Zhang Ling's experience highlights the potential benefits of incorporating growth mindset principles into formal teacher training programs, particularly in higher education where pedagogical approaches are constantly evolving.

This focus on continuous learning resonates with the quantitative finding of a positive correlation between growth mindset and well-being. The qualitative data suggests that a growth mindset, regardless of how it is developed, empowers teachers to view challenges as opportunities for growth, which ultimately contributes to their well-being.

Theme 3: the positive feedback loop between teaching enthusiasm and well-being. Finally, the interview data underscored the positive feedback loop between teaching enthusiasm and well-being. Teachers described how their passion for teaching energized them and fueled their desire to continuously improve their craft. However, the specific ways this enthusiasm manifested varied across educational contexts.

Enthusiasm through student breakthroughs. Li Hong (primary school teacher), for instance, spoke passionately about the joy of witnessing student breakthroughs in the early years: "That moment when a student finally 'gets it' - that's pure gold. Those little breakthroughs are what make teaching so rewarding. It reminds me why I do what I do, and it fills me with a sense of accomplishment that keeps me going, even on tough days." Li Hong's experience exemplifies how witnessing students grasp new concepts can be a powerful motivator for primary school teachers.

Enthusiasm through student engagement. In contrast, Sun Ming (veteran high school teacher, 20+ years) highlighted the importance of student engagement in maintaining his enthusiasm throughout his long career: "Teaching can be a rollercoaster ride. There will be days when you question everything. But then you see a student totally engaged, asking questions, and that spark reignites your passion. That enthusiasm is what keeps me coming back for more, and it definitely contributes to feeling good about

myself as a teacher.” Sun Ming’s perspective showcases how fostering active participation in high school classrooms can rekindle a teacher’s passion and contribute to their well-being.

Challenges and overcoming obstacles. Despite their enthusiasm, teachers also acknowledged challenges in maintaining it. Li Mei (high school English teacher, 10 years of experience) described how large class sizes could sometimes dampen her spirits: “Sometimes the sheer number of students can feel overwhelming. But that’s when I rely on my mindfulness practices (deep breathing exercises) to stay focused and remember why I’m here - to make a positive impact on these young minds.” Li Mei’s experience highlights how the mindfulness practices discussed in Theme 1 can be a valuable tool for teachers to overcome challenges and maintain enthusiasm in demanding situations.

These three themes are not independent but rather work together in a cyclical fashion to enhance teacher well-being. Mindfulness practices (Theme 1) can create a foundation of focus and composure, which is essential for effectively implementing a growth mindset (Theme 2) in the classroom. A growth mindset fosters a belief in personal and student development, leading to a more positive and enthusiastic approach to teaching (Theme 2). This enthusiasm, fueled by student engagement and a sense of accomplishment (Theme 3), can further reinforce both mindfulness practices (seeking techniques to maintain focus and well-being) and a growth mindset (demonstrating the value of perseverance).

Discussion

The present study delves into the intricate tapestry of factors influencing the psychological well-being of Chinese EFL teachers, offering a compelling analysis that resonates with existing literature while pushing the boundaries of our understanding. The findings illuminate not only the direct effects of mindfulness and growth mindset but also unveil an intriguing mediating role played by teaching enthusiasm.

As hypothesized (RQ1), the study confirms a direct and positive relationship between teacher mindfulness and psychological well-being. The confirmation of a direct positive relationship between teacher mindfulness and psychological well-being in this study aligns seamlessly with a growing body of research. This research highlights the multifaceted benefits of mindfulness practices for educators’ well-being. However, to gain a deeper understanding of this association, it is crucial to delve into the potential mechanisms underlying it. One key mechanism is stress management. Mindfulness cultivates present-moment awareness, allowing teachers to detach from negative thoughts and rumination, significant contributors to stress (Alahari, 2017). This detachment fosters a sense of calm and acceptance, enabling teachers to regulate their stress response more effectively (Crescentini et al. 2016). Another mechanism is emotional regulation. Mindfulness practices equip teachers with the ability to observe their emotions without judgment, fostering greater self-awareness and emotional control. This enhanced emotional regulation allows them to navigate challenging situations with composure and respond effectively to student needs and classroom disruptions (Hue and Lau, 2015).

Additionally, mindfulness promotes self-compassion by cultivating a sense of non-judgmental acceptance. This allows teachers to be kinder and more understanding towards themselves, especially when faced with setbacks or challenges. This self-compassion fosters greater resilience and protects against negative emotions like burnout and feelings of inadequacy (Zarate et al. 2019). These intertwined benefits of mindfulness—stress management, emotional regulation, and self-compassion—work

synergistically to enhance teachers’ well-being (Cicek and Gurbuz, 2023). By equipping teachers with the tools to manage stress effectively, regulate their emotions, and practice self-compassion, mindfulness allows them to navigate the inevitable challenges of the profession with greater resilience and equanimity (Braun et al. 2019; Hue and Lau, 2015). This, in turn, contributes to improved job satisfaction, increased motivation, and overall psychological well-being. Teachers’ experiences corroborated the quantitative association between mindfulness and well-being. For instance, Li Mei (pseudonym, high school teacher) described using mindfulness techniques like slow breathing to manage frustration and regain composure in the classroom. This aligns with the theoretical framework suggesting that mindfulness promotes stress management. Li Mei’s experience exemplifies this concept, as she explicitly linked her use of mindfulness practices with feeling calmer and more focused. This qualitative insight offers a concrete illustration of how mindfulness can be implemented in real-world settings to cultivate a sense of composure, directly corresponding to the quantitative finding of a positive association between mindfulness and well-being.

Similarly, the direct association between teacher growth mindset and psychological well-being (RQ2) reinforces the significance of fostering a belief in personal development. The observed direct association between teacher growth mindset and psychological well-being underscores the importance of cultivating a belief in personal development within the teaching profession. This finding aligns seamlessly with a substantial body of literature that consistently highlights the positive outcomes associated with embracing a growth mindset (Lam et al. 2023; Liu et al. 2023; Nalipay et al. 2022; Shoshani, 2021; Whittington et al. 2017; Zeng et al. 2016; Zeng et al. 2019). Teachers who adopt a growth mindset, characterized by the belief that intelligence and abilities can be developed through effort and perseverance, experience a cascade of beneficial outcomes. One of the primary advantages is the reduction in stress and anxiety levels. The literature consistently reports that educators with a growth mindset are better equipped to navigate challenges without succumbing to overwhelming stressors (Shoshani, 2021). This ability to confront challenges with a positive and adaptive mindset contributes significantly to the overall psychological well-being of teachers.

Moreover, the embrace of a growth mindset among teachers is associated with heightened self-efficacy. Teachers who believe in their capacity to learn and improve are more likely to approach their professional responsibilities with confidence, resilience, and a sense of agency (Nalipay et al. 2022). This increased self-efficacy, in turn, acts as a protective factor against the negative impacts of stress and contributes to an enhanced psychological well-being. Similarly, qualitative data supported the link between growth mindset and well-being. Wang Tao (pseudonym, middle school teacher) emphasized the importance of believing in his own ability and that of his students to learn and develop, a core tenet of a growth mindset. This belief fosters resilience and fuels motivation, ultimately contributing to well-being. Wang Tao’s perspective aligns with the quantitative finding that growth mindset mediates the relationship between mindfulness and well-being, potentially by enhancing teaching enthusiasm.

Job satisfaction is another positive outcome linked to a teacher’s growth mindset. When educators view challenges not as insurmountable obstacles but as opportunities for growth and development, they derive a sense of fulfillment from their profession (Lam et al. 2023). This satisfaction with their work contributes significantly to their overall well-being, creating a positive and fulfilling professional experience. Furthermore, the adoption of a growth mindset is associated with improved emotional regulation. Teachers who believe in the potential for personal

development are more likely to approach emotionally charged situations with resilience and adaptability (Zeng et al. 2019). This emotional regulation contributes to a more stable and positive psychological well-being, allowing teachers to navigate the emotional complexities of their profession more effectively.

The identification of the mediating role of teaching enthusiasm in the relationships between mindfulness, growth mindset, and psychological well-being represents a pivotal and intriguing finding in this study (RQ3). This interplay between internal psychological constructs (mindfulness, growth mindset) and their outward manifestation (teaching enthusiasm) offers a nuanced perspective on how well-being flourishes among Chinese EFL teachers. The positive association between mindfulness practices and increased teaching enthusiasm suggests a pathway through which mindfulness benefits extend beyond stress reduction. This finding aligns with prior research by Huang (2022), Molloy Elreda et al. (2019), and Sherretz (2011), highlighting the potential of mindfulness to cultivate a more passionate and fulfilling teaching experience.

The cultivation of present-moment awareness and acceptance through mindfulness practices likely translates into a more positive and energetic teaching presence (Moyano et al. 2023). This heightened awareness fosters a deeper engagement with students and teaching responsibilities. Furthermore, mindfulness-enhanced emotional regulation equips teachers to manage challenges effectively, thereby maintaining a consistent level of enthusiasm (Jennings, 2015). The self-awareness and compassion fostered by mindfulness practices might also play a crucial role by facilitating positive connections with students, further fueling teacher enthusiasm (He et al. 2023; Molloy Elreda et al. 2019).

The qualitative data further sheds light on the role of teaching enthusiasm as a mediator. Teachers like Li Hong (pseudonym, primary school teacher) spoke passionately about the joy derived from witnessing student breakthroughs. This aligns with the notion that mindfulness and growth mindset can cultivate a more positive and energetic teaching presence, ultimately contributing to well-being through heightened enthusiasm.

The finding that teaching enthusiasm mediates the relationship between growth mindset and well-being is consistent with existing research suggesting that a belief in personal development fosters increased motivation and engagement in teaching (Nalipay et al. 2021; Vermote et al. 2020). Teachers with a growth mindset, who possess a strong belief in their capacity to learn and develop, are more likely to approach their work with greater enthusiasm and motivation. The sense of agency and control nurtured by a growth mindset contributes to enhanced self-efficacy and enthusiasm in the classroom (Seaton, 2018). Wang Tao's (pseudonym) description of a "growth mindset" as keeping teaching exciting exemplifies how a growth mindset empowers teachers to approach their work with passion and dedication.

By integrating qualitative data with the quantitative findings, this study offers a more comprehensive understanding of how mindfulness, growth mindset, and teaching enthusiasm contribute to teacher well-being in Chinese EFL contexts. The qualitative data illuminates the mechanisms underlying these relationships, providing valuable insights into how these factors can be nurtured to support teacher well-being and potentially improve student learning outcomes.

Conclusion and implications

This mixed-methods study investigated the intricate interplay of factors influencing the psychological well-being of Chinese EFL teachers. Our findings illuminate two key takeaways. Firstly, mindfulness and growth mindset directly contribute to increased well-being among teachers. Secondly, teaching enthusiasm

emerges as a critical mediating factor, suggesting that mindfulness and growth mindset indirectly enhance well-being by fostering passion and enthusiasm for teaching.

The study's findings offer actionable insights that can be translated into practical recommendations for teachers, administrators, and policymakers. For teachers, integrating MBIs into daily routines can significantly enhance well-being. Practices such as mindfulness meditation, mindful breathing exercises, and mindful movement can help manage stress, regulate emotions, and maintain a present-moment focus. Additionally, teachers should consider incorporating mindful teaching techniques in their classrooms, such as mindful listening activities and student self-reflection through journaling. These practices benefit not only teachers but also create a more supportive and focused learning environment for students.

Administrators can play a crucial role in fostering a supportive environment that enhances teacher well-being by implementing regular professional development programs that include training on mindfulness and growth mindset. These programs equip teachers with the necessary skills to manage stress and foster personal and professional growth. Furthermore, creating collaborative learning environments where teachers can share best practices, co-plan lessons, and provide mutual support can cultivate a sense of community and shared purpose, enhancing teaching enthusiasm. Integrating project-based learning (PBL) approaches can empower teachers with greater autonomy and opportunities to design engaging and student-centered lessons, potentially sparking renewed excitement for teaching.

Policymakers should consider allocating resources to support the implementation of MBIs and growth mindset training in schools. Providing access to conferences, workshops, and mentorship programs focused on innovative teaching methodologies and resources can help teachers stay engaged and enthusiastic about their profession. Additionally, policies that promote a supportive school culture, reduce administrative burdens, and recognize teachers' efforts and achievements can contribute to enhanced well-being and job satisfaction. By addressing the practical needs of teachers through these evidence-based strategies, stakeholders can create a more supportive and enriching educational landscape, benefiting both teachers and students.

For researchers, this study opens exciting avenues for further exploration. One crucial direction is delving deeper into the specific mechanisms underlying the relationships between mindfulness, growth mindset, teaching enthusiasm, and well-being. Employing qualitative research methods can offer valuable insights into the lived experiences of teachers and the psychological processes at play. Additionally, examining the nuances of individual and contextual factors influencing the effectiveness of these interventions is vital. Research could explore how factors such as personality traits, cultural contexts, and school leadership styles moderate the relationships identified in this study. Finally, conducting longitudinal studies is essential to understand the long-term effects of promoting well-being among educators and investigate broader outcomes such as student learning, engagement, and school climate.

While the current study sheds light on the valuable connections between mindfulness, growth mindset, teaching enthusiasm, and psychological well-being among Chinese EFL teachers, a nuanced understanding necessitates acknowledging certain limitations. Although the study employed a combination of quantitative and qualitative methods, including self-reported measures via anonymous surveys and in-depth exploration through semi-structured interviews, potential biases inherent in self-reported data remain. Social desirability bias or inaccurate self-assessment could influence the quantitative findings. To further strengthen the validity of future research in this area, a wider range of data

collection methods could be considered. This might encompass utilizing physiological measures, such as heart rate variability for mindfulness, or conducting structured classroom observations of teacher behavior to gain a more objective perspective. Additionally, gathering data from students or colleagues regarding teacher mindfulness, enthusiasm, or overall effectiveness could provide valuable insights beyond self-reported data.

Furthermore, the study's focus on Chinese EFL teachers limits the generalizability of the results. While the findings offer valuable context within this specific population, the applicability to other cultural backgrounds or educational settings, such as English immersion programs or non-Asian EFL contexts, remains unexplored. Future cross-cultural studies could investigate whether these relationships hold true across diverse contexts. Research suggests that cultural values can influence teachers' perceptions of mindfulness and growth mindset. Eastern cultures, like China, often emphasize collectivism and self-improvement, which might influence how teachers respond to mindfulness practices and growth mindset interventions. Conversely, teachers in Western cultures, which tend to value individualism and achievement, might exhibit different responses (Hofstede, 1986).

This study's call to action is twofold. First, for researchers, it underscores the need for further exploration using a wider methodological lens to strengthen the validity and generalizability of the observed relationships. Examining the long-term impact on student outcomes and school environments would offer a more holistic understanding of the benefits. Second, for educators and policymakers, the findings provide a springboard for developing practical strategies. Teacher training programs can integrate mindfulness-based practices and growth mindset techniques to equip educators with tools for stress management, emotional regulation, and fostering a growth-oriented teaching philosophy. Furthermore, fostering collaborative learning environments and exploring innovative pedagogical approaches like PBL can nurture teacher enthusiasm and create a more engaging learning environment for students. By implementing these evidence-based strategies, we can create a ripple effect that enhances teacher well-being, student engagement, and ultimately, educational success.

Data availability

The datasets generated and analyzed during the current study are available from the corresponding author on reasonable request. Data will be provided in a de-identified format to ensure participant confidentiality.

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Author contributions

Yushu Xu contributed to the conceptualization, methodology, data collection, and writing of the manuscript. Jing Wang assisted in the data analysis, literature review, and revision of the manuscript. Both authors read and approved the final manuscript.

Competing interests

The authors declare no competing interests.

Ethical approval

The research reported in this article was conducted following the ethical guidelines of the Shanghai University of Finance and Economy Zhejiang College. Ethical approval was obtained from the Institutional Review Board (IRB) of the Shanghai University of Finance and Economy Zhejiang College. There was no specific approval number attached to the approval. All procedures performed in the study 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.

Informed consent

Informed consent was obtained from all individual participants included in the study. Participants were fully informed about the purpose of the study, the procedures involved, and their rights to withdraw at any time without penalty. Consent was obtained through written forms, and participants were assured of the confidentiality and anonymity of their responses.

Additional information

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