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# The relationship between mindfulness and second language resilience among Chinese English majors: the mediating role of academic hope

Yanping Rui<sup>1\*†</sup>, Yanjuan Zhang<sup>1†</sup> and Huiyi Jin<sup>1</sup>

## Abstract

**Background** In light of the heightened expectations surrounding the development of foreign language professionals in the age of artificial intelligence and the pursuit of academic excellence in Asian culture, Chinese English majors are faced with tremendous academic pressure. Accordingly, as a positive individual trait, second language (L2) resilience has recently received considerable attention in foreign and second language learning research.

**Purpose** Based on the hope theory, the broaden-and-build theory, and resilience theory framework, the present study explores the influence of mindfulness and academic hope on Chinese English majors' L2 resilience.

**Methods** We employed descriptive statistics, correlation analysis, and structural equation modeling (SEM) to investigate the relationships among mindfulness, academic hope, and L2 resilience within 351 Chinese English majors.

**Results** The study results found that Chinese English majors' mindfulness positively predicted students' academic hope and L2 resilience. Their academic hope also had a significant correlation with L2 resilience. Finally, SEM showed that academic hope remarkably mediated the relationship between mindfulness and L2 resilience.

**Conclusions** In a word, this paper reveals the important role of mindfulness and academic hope in enhancing students' L2 resilience. Besides, strengthening Chinese English majors' mindfulness also can promote their academic hope. At this point, it also underscores the essential mediating role of academic hope between mindfulness and L2 resilience.

**Implications** The results of this study have implications for fostering students' L2 resilience and helping them cope with the challenge of the language learning process. Teachers can implement relevant intervention promoting students' mindfulness, academic hope, and L2 resilience into language instruction, which conducting to students' language learning success.

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**Keywords** Mindfulness, Academic hope, Second Language resilience, Chinese English majors

## Introduction

In the era of artificial intelligence, according to the requirements of subject specialization, the primary focus should be cultivating composite talents of “foreign language+other majors” and linguistic composite talents of special-purpose English [1]. This undoubtedly poses great challenges to Chinese English majors. In addition, amid increasing competition for jobs and the Asian culture’s pursuit of academic excellence, an increasing number of Chinese college students are under growing academic pressure. Foreign language learning is a stressful activity, and numerous students suffer from negative emotions like lack of motivation, learning anxiety, and learning burnout that make it harder for them to learn English effectively [2]. In this particular situation, Chinese English majors are confronted with academic pressures that are unprecedented. Martin described resilience as students’ ability to deal effectively with stress, study pressure, and academic setbacks [3]. In positive psychology, resilience is a positive individual trait that has played a more important role in foreign language learning in recent years [4, 5]. Learning a second language (L2) is a drawn-out process that is fraught with difficulties, obstacles, and everyday inconveniences [6]. It is crucial to examine how language learners overcome learning obstacles and bounce back from L2 learning demotivation in terms of resilience, as language learners also face hurdles in their L2 learning, which typically requires years of dedicated effort.

In the L2 learning field, some scholars have also already begun to use the term “second language (L2) resilience” to develop relevant research [7–9]. To demonstrate the benefits of L2 resilience, previous literature has highlighted its significance by referring to its positive impact on students’ L2 proficiency, engagement, creativity, and L2 motivation [4, 10, 11]. Similarly, some researchers have probed the relationship between motivation and L2 resilience [8, 10, 12], which suggests that they influence each other. Consequently, it is crucial to cultivate resilience among L2 learners, as it serves as a key factor in their academic achievement. Thus, it can be seen that researchers have confirmed the potential value of resilience in language learning success, which renders it essential to further explore the factors influencing L2 resilience. In response to this necessity, many scholars have shown that L2 resilience can be affected by emotions (e.g., enjoyment, hope, anxiety) [7, 13]. Other researchers have also proved that learners’ personal and interpersonal traits (e.g., emotional intelligence, mindfulness, self-evaluation, self-efficacy, creativity) impact L2 resilience [6, 8, 14]. As evidenced in the relevant

literature, there has been considerable scholarly attention lately on the influence of positive emotions and personal and interpersonal traits on L2 students’ resilience.

Tillott’s resilience theory framework demonstrates that the development of resilience is supported by mindfulness as a fundamental ability [15]. Conversely, the review of the literature revealed that mindfulness and resilience are two relatively unexplored constructs in foreign language education [4, 8, 16]. Likewise, Fredrickson’s broaden-and-build theory proposes that positive emotions mitigate the negative impacts of negative emotions and help foster individual resilience [17]. The merits of positive emotions on language learners’ academic performance have been widely studied by researchers since the emergence of positive psychology in second language acquisition [18, 19]. Academic hope, as a positive emotion, has also begun to receive attention in the L2 field [20, 21]. Although the impact of positive emotions on resilience has been theoretically and empirically established in L2 learning [6, 7, 17], there is not sufficient research that specifically addresses academic hope and L2 resilience. Snyder’s hope theory suggests that focusing one’s attention through mediation can reduce stress and increase hope [22]. Mindfulness is one of the most popular mediation techniques [23], thus it can positively predict hope [24, 25]. In L2 education, there are few studies that investigated the impact of mindfulness on academic hope, but many scholars have shown the forward prediction of mindfulness on positive emotions [8, 26].

After reviewing relevant literature, there is scarce empirical research on the relationships among students’ mindfulness, academic hope, and L2 resilience in second language learning. Furthermore, there does not seem to be agreement on how academic hope could mediate the relationship between L2 resilience and mindfulness. Therefore, the present study will explore the complex relationships among mindfulness, academic hope, and L2 resilience in a sample of Chinese English majors to fill these gaps above. We also investigate the possible mediating role of academic hope between mindfulness and L2 resilience. These findings are expected to contribute to facilitating L2 learning achievement through fostering their L2 resilience and academic hope.

## Literature review

### Second Language (L2) resilience

Chu et al. conducted a comprehensive review and synthesis of existing research on resilience in language learning, with their findings indicating a consistent growth in scholarly attention to language learners over recent years [27]. Especially, some scholars have demonstrated that

the role of resilience can foster language teachers' well-being and development [28–30]. Resilience has become an influential concept in second language teaching and learning [31, 32], thus known as second language (L2) resilience in the foreign language field [6, 7]. Although buoyancy is a cognate construct for resilience, these two concepts differ significantly in the scope. Resilience is the ability to face sudden and enduring adversities and difficulties in the process of development, while buoyancy is related to the efforts an individual has to deal with everyday hardship [33]. L2 resilience has been depicted as the in spite of several L2 demotivating circumstances, L2 learners' deliberate and practical attempts to work more and their conscious energizing cognition [9]. Malmir and Vosoughi also referred to L2 resilience as L2 learners' steadfastness, adaptability, and resuscitation capability during their language learning processes specifically when learners encounter some cognitive, meta-cognitive, affective, and sociocultural difficulties due to the cumbersome task of learning a foreign language [34]. As a trait of resilience, buoyancy also helps learners stay motivated and engaged in learning, contributing to improved learning outcomes [35]. But buoyancy is mainly related to problems and anxieties that interrupt students' motivation by threatening their persistence and self-confidence, whereas resilience is more concerned with closely to adversities or threats that hinder development [6]. Thus, L2 resilience was presented as a special characteristic only a few have.

As evidenced by past studies, resilience, as a multifaceted concept, has been actively discussed in second language learning. Nguyen et al. reported five components of L2 resilience in L2 learning process: social competence, use of storytelling, autonomy, sense of purpose, and problem-solving skills [36]. Using a mixed-methods methodology, they demonstrated the favorable relationships between students' storytelling experiences and their L2 resilience by integrating the L2 resilience scale, storytelling surveys, and semi-structured narrative interviews. There was another study proposing that L2 resilience also includes three different components, namely, learners' emotional positivity or happiness (i.e., students' views of their lives as positive and fulfilling), persistence (continuously endeavoring to handle problems while facing obstacles), and self-regulation (the capacity to regulate one's thoughts, feelings, and emotions) [37]. The most significant influence on the students' L2 competency among them was persistence. Likewise, in Kim and Kim's investigation, three components of L2 resilience were shown, namely, optimism, hardiness, and interpersonal features [38]. Being optimistic helps people avoid being fixated on unpleasant situations and pessimistic thoughts. When someone works hard, they can handle challenging situations with composure. Strong interpersonal

relationships and good communication skills are a source of social support for resolving life's issues. One can discover more efficient solutions to problems by discussing them with others. Duan et al. unveiled a four-factorial structure of student academic resilience in English learning, including positive individual characteristics (namely, empathy, self-esteem, problem-solving, and goals and aspirations), teacher support (describing how a teacher helps, befriends, trusts, and is interested in students), peer support (students' feeling of receiving emotional care, companionship and help through interacting with their peers), and family support (mainly involving communication, understanding and parental investment), based on the results of exploratory and confirmatory factor analyses, which serves as a catalyst for future language teaching and learning [39]. In the group of these studies, they used a hierarchical factor model to identify the L2 resilience subcomponents. These researchers have persisted in their academic endeavors to integrate the factors and evaluate resilience in a more thorough manner in order to comprehend L2 resilience as a multifaceted concept.

Numerous scholarly articles have highlighted the critical role of L2 resilience, demonstrating that it has a significant and positive influence on various aspects of the language learning process, including creativity, engagement, and L2 learning motivation, as well as academic outcomes, such as L2 proficiency, L2 reading, and academic achievement. For example, Lei and Lei's research result suggested that L2 learners' L2 resilience and hope positively predicted their creativity, and it recommended that teachers should use interventions that encourage optimism and L2 resilience in language instruction to help students become more creative [11]. Liu et al. further revealed that resilience and motivation serve as sequential mediators in the relationship between burnout and engagement, thereby framing this mediating pathway as a process through which students' psychological resources (e.g. resilience, motivation, and engagement) fluctuate from a conservation-of-resources perspective [40]. Another important contribution in this regard was that several researchers all showed that there were notable positive relationships found between L2 resilience factors and L2 learning motivation [12, 38]. Regarding the connection between L2 learning demotivation and L2 resilience, it was significantly inverse. They also addressed both L2 proficiency and L2 resilience. For instance, in a sample of undergraduate students, primarily those who majored in or double majored in English education at a private college in the capital city of South Korea, Kim and Kim investigated the structural relationships among L2 learning motivation, L2 resilience, motivated behavior, and L2 proficiency [38]. The results of the SEM analysis showed that L2 resilience influenced L2 proficiency

through motivated behavior and L2 learning motivation. Moreover, Malmir and Vosooghi examined the contribution of L2 resilience to learners' reading comprehension performance of Iranian EFL learners [34]. The regression analyses revealed that L2 resilience was a better predictor of reading comprehension of EFL learners compared to reflectivity. The study by Liu et al. suggested that the predictive effect of English learning resilience on academic achievement highlighted the urgency to promote resilience during language learning process [41]. Therefore, as a determinant of individual variability that influences the process and outcomes of L2 learning, these findings suggested that resilience may be further investigated.

On the whole, recent studies on the influence of L2 resilience in the English learners' learning process have gradually gained the attention of a wide range of scholars. Besides, L2 resilience or positive adaptation has been proposed to be very important in L2 development, specifically in study-abroad situations [42]. To our knowledge, research related to the factors influencing L2 resilience has yet to be adequately explored in the context of second language teaching and learning. Thus, to bridge this research gap, it is necessary to extend the relevant research to improve the language learners' L2 resilience.

### **Mindfulness and L2 resilience**

Scholar Kabat-Zinn introduced mindfulness into psychology research, defining mindfulness as "mindness", namely, purposefully, consciously concerned with and aware of the present moment without making any judgment or reaction to the present moment, and the initial advancements in mindfulness research occurred primarily within the field of medicine [43]. The advent of positive psychology and its application in educational contexts has rendered mindfulness a highly efficacious instrument for enhancing focus and awareness in academic settings. Furthermore, it allows educators to utilize their time in an optimal manner, which in turn facilitates students' capacity to become more aware of the present moment [44]. In the academic context of second language learning, many researchers also highlighted the contributions of mindfulness to cultivate their creative thinking [45], promote learning engagement [46, 47], improve academic performance [48], and affect their L2 emotions [49, 50] and physiological/psychological well-being [51]. Zeilhofer stated that the self-awareness of mindfulness exercises may boost meta-cognitive awareness during second language learning, which could help students self-regulate their language usage in terms of forms, vocabulary, and gaps [52]. These researches provide a foundation for investigating the role of mindfulness in L2 instruction and elucidate how it contributes positively to an individual's language learning experience.

Galante et al. proposed that mindfulness led to an individual's experience of resilience [53]. Tillott's resilience theory also points out that mindfulness is a fundamental ability that supports the growth of resilience [15, 54]. Neurologically, the prefrontal cortex and amygdala are reinforced by mindfulness, which cultivates composure and can prevent individuals from succumbing to negative thought patterns, which sheds light on the relationship between mindfulness and resilience [55]. Consequently, several studies also have been observed that mindfulness exerts a favorable predictive influence on resilience [48, 56, 57]. In the L2 learning context, when Ghanizadeh et al. investigated mindfulness and L2 resilience as methods for boosting motivation and self-fulfillment in 221 English learners from various academic levels and universities, they found that mindfulness was a positive predictor of the other three variables and that there was the strongest correlation between mindfulness and L2 resilience [8]. Erdemir et al. discovered that mindfulness-based activities could improve the L2 resilience of vocational high school students from low socioeconomic backgrounds, who frequently had weaker L2 resilience when learning English as a foreign language in Turkey [58]. It can be seen that at the university or high school stage, L2 resilience plays an important role in students' foreign language learning. Over the past few years, the positive relationship between mindfulness and resilience has drawn attention in educational field, but there is still a paucity for the empirical research on mindfulness and L2 resilience in foreign language learning.

### **Academic hope and L2 resilience**

Research on L2 learning has taken an emotive turn since positive psychology was introduced in 2012, with a wide range of emotions represented by anxiety, enjoyment, and boredom being spotlighted broadly [59]. Hope is a positive emotion that has recently started to be studied in L2 learning [11, 21, 60]. In educational settings, academic hope was described by Snyder et al. as a motivational state founded on goal-directed energy (agency) and planning how to meet goals (pathways) [61]. That is to say, it is a dynamic, cognitive, and motivational process that consists of three parts: "goal," "agency," and "pathways". Through these factors, the individual establishes specific objectives, stays resolute, and uses various tools and techniques to overcome obstacles in achieving those goals [22]. Hope has been identified as a critical factor contributing to students' sustained effort and academic achievement [62]. According to Pekrun Progress Emotions' Control-Value Theory, hope is a constructive, optimistic emotion that inspires language learners to advance their language skills [63]. Derakhshan et al. also highlighted that academic hope was a dynamic cognitive-motivational system that had numerous positive benefits

in a variety of domains, including teaching and learning languages [64]. In the L2 learning context, various studies also have shown that academic hope is associated with more constructive outcomes. Academic hope can change the negative emotions and increase the positive emotions [65, 66], promote academic engagement [20, 67], and enhance academic performance in language learners [19].

In the broaden-and-build theory, Fredrickson stated that the expansion of an individual's immediate thought-action repertoires was a critical function of positive emotions, which promoted the discovery of new and innovative ideas and behaviors, thereby expanding the individual's personal resources, including resilience [17]. As a positive emotion, academic hope can reduce stress, control emotions, foster personal development, and assist in reaching objectives [22]. Ong et al. also indicated that academic hope was a primary factor in resilience [68]. Therefore, academic hope comes intimately connected with resilience [69, 70]. Similarly, in the context of L2 learning, resilience and hope were linked to perseverance, indicating that they were inherently intertwined, as Oxford explained in his EMPATHICS model for language learners' happy psychology [71]. Positive emotions have been shown to have a theoretical and practical impact on L2 learners' resilience [7, 13, 72, 73]. Especially examining the path from academic hope to L2 resilience, students who have high academic hopes were better able to handle stress and challenges, which encourages optimistic expectations during learning process [72]. Furthermore, highly hopeful learners often possess a strong ability to overcome adverse experiences [18], which contributes to increased levels of L2 resilience [13]. As Jiang and Liu stated, hopeful students are more likely to view challenges as opportunities for feedback to improve their English skills, rather than failures [62]. Therefore, the cultivation of academic hope can be regarded as a method to enhance learners' L2 resilience, further improving their learning ability. Many empirical investigations have established a relationship between positive emotions and L2 resilience, but there appears to be a lack of clarity regarding the specific association between academic hope and L2 resilience within the context of language learning process.

### **Mindfulness and academic hope**

Brown et al. provided convincing proof that mindfulness was associated with positive emotional experience [74]. Likewise, it argued that mindfulness potentially augmented eudaimonic meaning making to elicit positive emotions [75]. Besides, mindfulness can facilitate cognitive reappraisal in the mindful coping theory of Garland et al. [76]. According to this model, when a given event is appraised as a threat, harm, or loss that exceeds one's capabilities, the individual may initiate an adaptive

response by decentering from this stress appraisal into the mode of mindfulness, wherein one attends to the dynamic process of consciousness itself rather than its contents. This mode increases attentional flexibility and broadens awareness. From the vantage point of this expanded metacognitive awareness, one can then positively reappraise the given event by attributing to it new meaning. This new attribution may arise either through a conscious process of reflection or a more automatic process based on spontaneous insight. The reappraisal of the event then results in positive emotions such as compassion, trust, confidence, and equanimity, which reduce stress and, in turn, influence subsequent appraisal processes. Thus, mindfulness positively affects positive emotions.

Numerous studies also have demonstrated the correlation between mindfulness and emotions, including enjoyment [77], anxiety [49, 78] and boredom [2, 50]. Therefore, academic hope, as a positive emotion, will be clearly influenced by mindfulness. Based on previous researches, several studies have examined the relationship between mindfulness and academic hope in education and psychology fields [24, 25, 79]. Malinowski and Lim proposed that mindfulness increased positive affect, academic hope, and optimism, which in turn had a favorable impact on work engagement [25]. Lo et al. also emphasized the positive correlation between mindfulness and academic hope in their SEM model [24]. Similarly, it was discovered that instructors who practice mindfulness experienced positive emotions, such as academic hope, which allows them to recover from and adjust to the demanding contextual expectations without burning out [79]. As an important indicator of success in education, whether for learners, instructors or other people, mindfulness has been shown to have a potential impact on academic emotions. However, undeniably, few researches focus on second language learning contexts, which leads to the lack of studies on mindfulness and academic hope in the L2 learning field.

### **Hypothetical model of the relationship between mindfulness, academic hope, and L2 resilience**

Based on the above review, many scholars have begun to keep a watchful eye on the investigation of mindfulness, academic hope, and L2 resilience within the context of second language learning. Prior research has recognized the potential roles of mindfulness and academic hope on resilience, as well as the influence of mindfulness on academic hope, from theoretical and practical aspects in educational settings. The framework of this study serves as a solid basis for the research presented. Firstly, the mindful coping theory demonstrated that mindfulness can help learners reduce stress and contribute to positive emotions [76], advocating the positive relationship



between mindfulness and academic hope. Secondly, the broaden-and-build theory proved that positive emotions can build personal resources (e.g., resilience) [17], supporting the positive impact of academic hope on L2 resilience. Finally, the resilience theory also illustrated that mindfulness is a core skill that underpins the development of resilience [15], siding with the close connection between mindfulness and L2 resilience. In addition, some studies had demonstrated that positive emotions (e.g. academic optimism, self-compassion) mediated the relationship between mindfulness and resilience [57, 80], but there is a glaring gap in the mediating effect of academic hope, as a positive emotion, between mindfulness and resilience. Moreover, the researcher particularly overlooked their relationships in the context of second language learning. Therefore, considering the importance of examining these variables, this article reports on a study conducted with English majors in Chinese universities to investigate the relationships among mindfulness, academic hope, and L2 resilience. The current study presents the following hypothesized model in Fig. 1.

Therefore, the hypotheses are as follows:

**Hypothesis 1** *Chinese English majors' mindfulness positively predicts their academic hope.*

**Hypothesis 2** *Chinese English majors' mindfulness positively predicts their L2 resilience.*

**Hypothesis 3** *Chinese English majors' academic hope positively predicts their L2 resilience.*

**Hypothesis 4** *Academic hope mediates the relationship between mindfulness and L2 resilience among Chinese English majors.*

## Methodology

### Participants

This study involved 383 Chinese English majors recruited online, who come from a variety of universities in China. However, 32 students (8.36%) were not included in the study because their questionnaire answers were either inaccurate or incomplete. As a result, there were 351 students in the final sample, with 292 females (83.2%) and

59 males (16.8%). The grade distribution was 59 freshmen (16.8%), 109 sophomores (31.1%), 76 juniors (21.6%), and 107 seniors (30.5%). This demographic distribution gave us a thorough understanding of the diversity among the participants in our study.

### Instruments

#### *The mindfulness attention awareness scale*

The Mindfulness Attention Awareness Scale (MAAS), a one-dimensional construct with 15 items, was used to measure mindfulness. This instrument was specifically developed to assess the mindful attention levels of participants and was modified from the popular mindfulness survey for adults [81]. Using a 5-point Likert scale, participants responded to questions about how strongly they disagreed or agreed. Since the items are scored in reverse, higher scores indicate greater awareness. The internal consistency reliability coefficient (Cronbach's alpha) for this study was 0.928, indicating satisfactory reliability of the questionnaire.

#### *The academic hope scale*

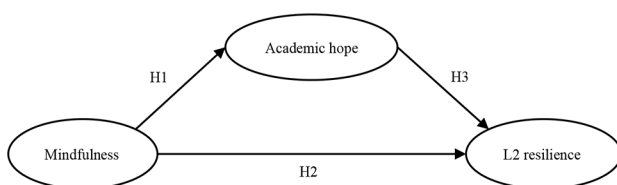
Learners' academic hope was assessed using a scale developed by Sheghefti and Samani, consisting of 9 items based on Snyder's hope theory [22, 82]. Using a 5-point Likert scale, these items were assessed from 1 (totally disagree) to 5 (absolutely agree). The Academic Hope Scale measures the two components of agency and pathways. The original questionnaire was presented to all learners, so the items were modified by changing the statements to target Chinese English majors more specifically. The reliability of the scale was demonstrated by high Cronbach's Alpha values for agency ( $\alpha = 0.899$ ), and pathways ( $\alpha = 0.870$ ), signifying an acceptable alpha level for internal consistency.

#### *The second Language resilience scale*

After being modified from Shin et al., Kim et al. validated the Second Language Resilience Scale [32, 83]. This study used the scale to collect data on learners' L2 resilience. Learner happiness (9 items), persistence (3 items), and self-regulation (3 items) were assessed using a five-point Likert scale from strongly disagree (1) to strongly agree (5). Similarly, the questionnaire was adjusted to align with the characteristics of Chinese English majors. The internal reliability of the scale was calculated in this study and the results revealed an acceptable reliability for learner happiness ( $\alpha = 0.902$ ), persistence ( $\alpha = 0.853$ ), and self-regulation ( $\alpha = 0.813$ ), indicating a high degree of internal consistency.

### Data collection

This paper used online survey methods to collect data for this investigation. We distributed three online scales



**Fig. 1** Hypothetical model of the relationship between mindfulness, academic hope, and L2 resilience

and paper questionnaires pertaining to English majors' mindfulness, academic hope, and L2 resilience among a sample of 383 Chinese English majors who had different demographic backgrounds. Survey respondents were given an explanation of the study's goal and the meaning of the three constructs before data collection. Following the ethical considerations of consent, confidentiality, and privacy, we sent the participants links to the surveys on wxj.cn and instructed them to carefully complete each question during their free time. After 40 days, 383 questionnaires were fully answered and submitted, of which 351 were valid. In this procedure, the questionnaires were completed in less than 100 s and of which all data being the same were deleted. To ensure that no further data would be contributed to the dataset, we deleted the online survey link after the data gathering phase was complete. After that, we went over the whole data to look for any possible mistakes again before the statistical analysis. SPSS software was then used to evaluate the data, and the relevant statistical methods were used in accordance with the goals.

#### Data analysis

The researcher analyzed the data using SPSS 26.0 and Amos 28.0. Firstly, descriptive statistics were performed using mean, standard deviation, Skewness, and Kurtosis to reflect the participants' profiles of mindfulness, academic hope, and second language resilience. Secondly, Pearson correlation was conducted using SPSS 26.0 to analyze the relationships among mindfulness, academic hope, and L2 resilience. Thirdly, SEM was employed using Amos 28.0 to test the mediating role of academic hope between English majors' mindfulness and second language resilience. Before the above procedure, we tested the reliability and validity of the questionnaire. The results showed a high degree of internal consistency. Then Confirmatory Factor Analysis (CFA) was performed using Amos 28.0 to evaluate the convergent and discriminant validity of the scales prior to SEM in Appendix A. Regarding the convergent validity, the composite reliability (CR) values were higher than 0.7, and average variance extracted (AVE) values were mostly higher than 0.5, which suggested that the convergent validity was satisfactory [84]. Discriminant validity was confirmed using the criterion, where the square roots of AVE values for each construct exceeded the correlations between constructs, indicating the good convergent validity of each

scale. Besides, the model had an acceptable model fit ( $X^2/df=1.886$ ,  $RMSEA=0.050$ ,  $IFI=0.935$ ,  $TLI=0.930$ ,  $CFI=0.935$ ), which aligned with Kline's criterion [85]. These results confirmed the robustness of the measurement model, justifying its use in subsequent SEM analysis to test mediation hypotheses.

## Results

### Descriptive statistics and correlation analysis

Table 1 shows mean, standard deviation, Skewness, and Kurtosis. The Skewness and Kurtosis indices are between  $-2$  and  $2$  for the three variables, which indicates that the data are normally distributed. Based on numerical values, Chinese English majors had a high level of L2 resilience, and an intermediate-upper level of mindfulness and academic hope. Therefore, Chinese English majors showed a good overall situation of mindfulness, academic hope, and L2 resilience.

The researcher used the Pearson test to investigate the correlations among Chinese English majors' mindfulness, academic hope, and L2 resilience in the present study. Table 1 also provides a summary of the correlation analysis, which brought to light the degree of correlation among the three variables. As displayed in Table 1, mindfulness significantly predicted academic hope ( $r=0.573$ ,  $p<0.01$ ) and L2 resilience ( $r=0.620$ ,  $p<0.01$ ). Similarly, academic hope also has a highly significant impact on L2 resilience ( $r=0.865$ ,  $p<0.01$ ).

### Testing the mediating model

To confirm the hypothesis that the relationship between mindfulness and L2 resilience was significantly mediated by academic hope, SEM was performed to examine the structural relationships among them.

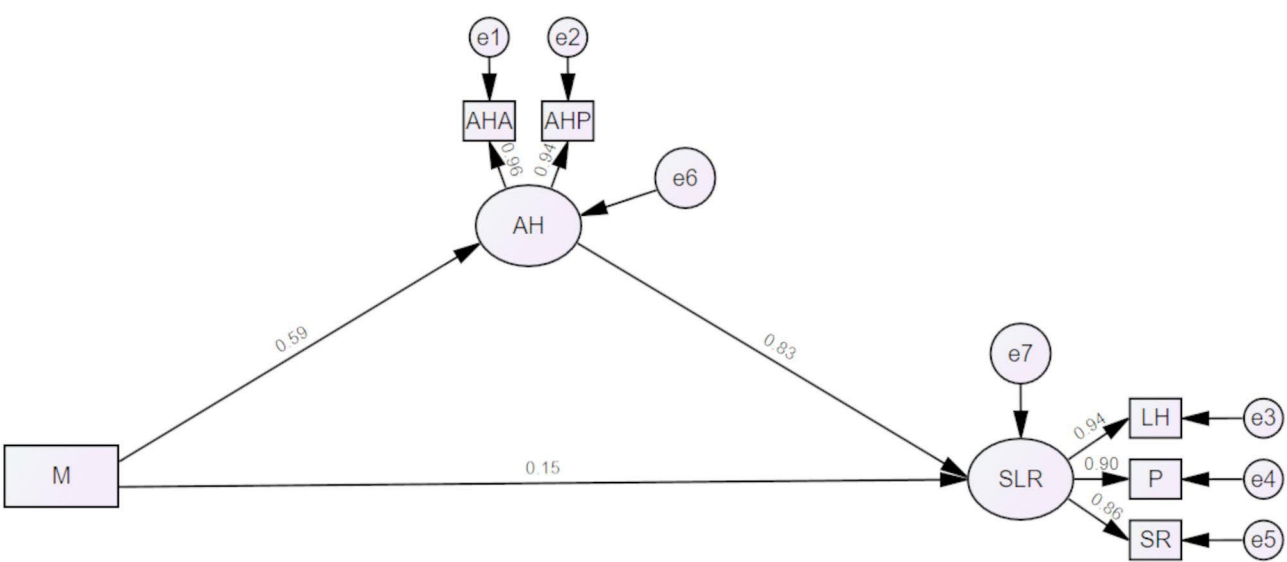
Figure 2 shows the mediation model using the equation structural modeling through Amos 28.0., where all of the expected paths were significant. As indicated in Table 2, significant positive paths were found from mindfulness to academic hope (standardized coefficient = 0.59, unstandardized coefficient = 0.65,  $p<0.001$ ), from mindfulness to L2 resilience (standardized coefficient = 0.15, unstandardized coefficient = 0.13,  $p<0.001$ ), and from academic hope to L2 resilience (standardized coefficient = 0.83, unstandardized coefficient = 0.70,  $p<0.001$ ).

The outcomes of Table 3 displayed that the mediating role of the variables in the study. Firstly, the total effect of mindfulness on L2 resilience was 0.839, and its 95%

**Table 1** Descriptive statistics and the correlations among these research variables

Variables	Mean	SD	Skewness	Kurtosis	Mindfulness	Academic hope	L2 resilience
Mindfulness	3.32	0.73	-0.33	-0.50	1.000		
Academic hope	3.43	0.81	-0.65	0.04	0.573**	1.000	
L2 resilience	3.56	0.74	-0.90	0.38	0.620**	0.865**	1.000

Note: \*\* Correlation is significant at the 0.01 level



**Fig. 2** The mediation model. Note: M = mindfulness, AH = academic hope, SLR = second language resilience, AHA = academic hope agency, AHP = academic hope pathways, LH = learner happiness, P = persistence, SR = self-regulation

**Table 2** Estimates of regression weights for the variables

	Standardized coefficients	Unstandardized coefficients	S.E.	C.R.	P	Yes/No
M—> AH	0.59	0.65	0.050	13.074	***	Yes
AH—> SLR	0.83	0.70	0.032	21.995	***	Yes
M—> SLR	0.15	0.13	0.031	4.677	***	Yes

Note: M = mindfulness, AH = academic hope, SLR = second language resilience, \*\*\**p* < 0.001

**Table 3** Mediating effect of the three variables

	Effect	SE	95% BPCI		<i>p</i>	Effect ratio
			Low	High		
Total effect of mindfulness on L2 resilience (a*b + c)	0.839	0.124	0.638	1.128	0.000	100%
Direct effect of mindfulness on L2 resilience (c)	0.212	0.067	0.097	0.362	0.000	25.27%
Indirect effect of mindfulness on L2 resilience via academic hope (a*b)	0.627	0.101	0.466	0.863	0.000	74.73%

Bootstrap Confidence Interval didn't include 0. When the mediating role of academic hope is controlled, the direct effect coefficient of mindfulness on L2 resilience was 0.212, and its 95% BPCIT also didn't include 0. Thus, this direct impact was significant, that is to say, mindfulness has a significant and positive prediction role on students' L2 resilience. Then the indirect effect of mindfulness on L2 resilience through academic hope was also significant, which accounted for 74.73% of the total effect, as the 95% BPCI did not include zero (0.466, 0.863). According to Zhao et al., when the mediator variable (i.e. academic hope) was entered into the model, the direct relationship between mindfulness and L2 resilience remained significant in the presence of the mediator model, which demonstrates that academic hope partially mediated the role of mindfulness on L2 resilience [86]. It means that part of the effect of mindfulness on L2 resilience depends on the presence of academic hope, and academic hope located

between the two variables causes their indirect relationship with each other.

Discussion

The current study investigated complex connections among mindfulness, academic hope, and L2 resilience of Chinese English majors. We tested the significant impact of mindfulness on Chinese English majors' academic hope and L2 resilience, and the positive role of academic hope on L2 resilience. In addition, we confirmed that academic hope acted as the mediator in the link between mindfulness and L2 resilience.

The outcomes reflected the relationships among Chinese English major students' mindfulness, academic hope, and L2 resilience within the context of second language learning. Firstly, the positive relationship between mindfulness and academic hope was discovered among Chinese English majors. It further proved the mindful coping theory that the students with high level of



mindfulness could minimize the stress and increase positive emotions like academic hope [76]. The finding is in line with Malinowski and Lim [25]. They discovered that among 299 adults in full-time employment, raising dispositional mindfulness would increase hope, contributing to improving their job engagement and well-being. This result is also consistent with the outcomes of Lo et al. [24]. They suggested that the positive correlation between Taiwanese university students' mindfulness and perceived hope constituted a sequential mediation effect, which mediated the relationship between perceived social support and mental health literacy. Yang et al. directed their study to foreign language teachers, while this paper focused on English major students [79]. They also affirmed that mindfulness promoted teachers' positive emotions (e.g. academic hope). Secondly, when it comes to the powerful role of mindfulness on L2 resilience, it can be asserted that this finding is aligned with the upshot reached by Ghanizadeh et al. [8]. They found that the causal relationship between EFL learners' mindfulness and L2 resilience was the most robust one among the six direct paths in structural model, and the highest connection also had been remarked between them in the correlation analysis among mindfulness, L2 resilience, self-fulfillment, and L2 motivation. Erdemir et al. reported that vocational high school students can improve their L2 resilience via mindfulness-based practices, which is also congruence with the result of this paper [58]. This finding lends support to Tillott's resilience theory, which propounded that mindfulness as a core interpersonal skill predicates the development of resilience [15, 54]. Similarly, it also backs up the neurological research result that mindfulness reinforces the links between the prefrontal cortex and the amygdala, which help people overcome inactive thinking, i.e. increase resilience [55, 87].

Thirdly, the current study uncovered a strong association between academic hope and L2 resilience. Concerning the finding, it concurs with the prior research that showed academic hope may be a source of resilience [68]. The present study would make sense to contrast this result with that of Baguri et al., who found that teachers who had high hopes were better able to recover from extremely stressful conditions, facilitating resilience [69]. It also bolsters Lenz's research outcomes, which elucidated that middle and high school participants' hope tended to predict their resilience [70]. This discovery is also in accord with Fredrickson's broaden-and-build theory, which brought to mind that positive emotions (e.g. academic hope) can promote the discovery of novel and creative concepts and behaviors, which in turn expand the individual's resources (e.g. resilience) [17]. This paper further verified the relationships among mindfulness,

academic hope, and L2 resilience targeted at Chinese English major students.

Finally, this paper confirmed that academic hope plays a mediator function between mindfulness and L2 resilience among Chinese English major students. Bassak et al. scrutinized the relationships among college students' mindfulness, academic optimism, and academic resilience, which showed that the mediating role of academic optimism on the connection between mindfulness and resilience [80]. Likewise, Salsabila and Widyasari testified that the students' self-compassion mediated the relationship between mindfulness and academic resilience [57]. Academic optimism and self-compassion are all positive emotions [88, 89]. The prior studies also have demonstrated the positive impact of mindfulness on positive emotions and resilience [8, 77], and the beneficial role of positive emotions on resilience [17]. Moreover, the framework of this study, i.e., the mindful coping theory, the broaden-and-build theory, and the resilience theory, attested the close relationships among mindfulness, positive emotions, and resilience [15, 17, 76], alluding to the possibility that the mediating role of positive emotions between mindfulness and resilience. Therefore, although there is a clear lack of research on the connections among mindfulness, positive emotions, and resilience, we postulated that the interaction between the other two variables may be mediated by positive emotions. These earlier researches also echo this hypothesis, which aligns with the findings of the present investigation within the context of second language learning [57, 80]. Academic hope, as a positive emotion, its mediating role in the relationship between mindfulness and L2 resilience demonstrated again positive emotion may mediate the link between them in the current study.

## Conclusion and implication

This study emphasized the crucial roles of mindfulness, academic hope, and L2 resilience among English major students, which are all essential for their academic performance. These findings also revealed the relationships among mindfulness, academic hope, and L2 resilience, as well as the mediating function that academic hope performed between the other two variables. In the context of second language learning, fostering the students' mindfulness can promote their academic hope and L2 resilience, which gives a leg up to compel students to move beyond their limits to sustain learning and improve academic performance. Besides, the result, the indirect impact of academic hope on the relationship between mindfulness and L2 resilience, indicated that L2 learners' mindfulness would increase L2 resilience better when they have higher academic hope. Chinese English majors who possess strong L2 resilience are more likely to overcome obstacles and successfully finish their education.

Accordingly, this study holds considerable importance for the advancement of Chinese English major students' learning process.

The study offers several implications. First of all, while mindfulness, academic hope, and L2 resilience have been hot topics in positive psychology in recent years, there is still scope for researchers to explore them in the field of second language teaching and learning. Many researchers have evinced the close links among the three variables. In addition to reducing students' stress and anxiety, mindfulness exercises in schools are designed to enhance their empathy and compassion [24]. Thus, augmenting the L2 learners' mindfulness level not only fosters their academic hope and L2 resilience but also facilitates their academic success jointly. The teachers are responsible for helping students to understand and actively enhance mindfulness practices in their second language learning process. Teacher support plays a clear role in students' learning behavior and psychological state in foreign language education [90]. Liu et al. found that perceived teacher support mediates the relationship between L2 grit and anxiety, suggesting that teachers can design some mindfulness activities (e.g., guided meditation, reflective writing) to enhance students' emotional regulation while simultaneously reinforcing language skills [91]. Secondly, this paper can provide pedagogical insights uniquely for the integration of mindfulness, academic hope, and L2 resilience within the Chinese second language education from a positive psychological perspective. Li suggested that the integration of positive education and language instruction within the context of foreign language education in China can construct positive language education that prioritizes students and aims to promote their academic performance and overall well-being [92]. The integration of some exercises like mindfulness activities, resilience cultivation, and hope-oriented goal-setting tasks into language curricula could help learners to reduce burnout and stay positive. Finally, teachers and students must realize the importance of developing mindfulness, academic hope, and L2 resilience. It is more difficult for pupils to acquire English properly and completely in China since it is taught as a foreign language rather than in a context where it is spoken. Therefore, Chinese English majors especially would suffer more adversities, and they need to cultivate their mindfulness, academic hope, and L2 resilience to cope with language learning difficulties and attain educational success.

Notwithstanding these implications, we recognize some restrictions. First, the sample is inadequately generalizable. The study concentrates on exploring the relationships among mindfulness, academic hope, and L2 resilience for Chinese English majors, which cannot provide a comprehensive picture of foreign language learners' three characteristics (mindfulness, academic hope,

and L2 resilience) in China. Future studies should consider all English as a foreign language learner. Another lacuna that needs to be addressed is that this research only adopted a quantitative approach to delve into the associations between mindfulness, academic hope, and L2 resilience. Future researchers can study them through the combined quantitative and qualitative methods to sufficiently develop complex relationships between these variables. In addition, this study is a cross-sectional study and did not conduct follow-up research, which only investigated Chinese English majors' mindfulness, academic hope, and L2 resilience at a certain time point. Therefore, a longitudinal study design should be used to capture trends in the interactions among these three factors more thoroughly. Last but not least, the antecedent research has proved the mediating impact of positive emotions on the relationship between mindfulness and L2 resilience, but this paper only explored the role of academic hope. The future study should investigate the mediating influence of other positive emotions (e.g. enjoyment, pride, excitement, etc.) on the association between mindfulness and L2 resilience, and compare their mediating roles.

#### Abbreviations

SPSS	Statistical Package for the Social Sciences
Amos	Analysis of Moment Structure

#### Supplementary Information

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Supplementary Material 1

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#### Author contributions

Both authors listed in the study have materially participated in the research and article preparation. YPR was responsible for the investigation, conceptualization, and manuscript revision. YJZ contributed to data collection and statistical analysis, and wrote the original draft. HYJ collected the data and completed the research design. All authors have read and approved the final draft for submission.

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#### Data availability

The datasets will be available from the corresponding author on the reasonable request.

#### Declarations

##### Ethics approval and consent to participate

All procedures followed were in accordance with the ethical standards of the responsible committee of human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000. All participants carefully read and signed the informed consent form before beginning their participation in this study. This study uses anonymous information data to

conduct research, and does not cause harm to the human body and does not involve sensitive personal information or commercial interests. Because of the informed consent and the hypothetical and non-intrusive nature of the study, no formal ethics committee was required to review the study as per the Ethical Review Measures for Life Sciences and Medical Research Involving Humans promulgated by China.

#### Consent for publication

No applicable.

#### Competing interests

The authors declare no competing interests.

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