



# Teacher autonomy support predicts intended effort among EFL learners: the mediating role of hope and shame

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## Abstract

Despite the growing body of literature on teacher autonomy support (TAS) and student motivation in educational contexts, there remains a paucity of research investigating the mediating mechanisms through which TAS influences intended effort (IE) among Chinese English as a Foreign Language (EFL) learners, particularly regarding the roles of hope and shame, two important but often-underemphasized achievement emotion. To this end, drawing upon the Control-Value Theory of achievement emotions, this study explores the mediating roles of hope and shame in the relationship between TAS and IE among 402 EFL learners from a key university in northern China. Structural equation modeling reveals that TAS positively predicts both IE and hope while negatively impacting shame. Furthermore, hope positively affects IE and mediates the association between TAS and IE, whereas shame exerts a detrimental effect on IE and mediates the relationship between TAS and IE. Pedagogical implications and suggestions for future research are provided.

**Keywords** Teacher autonomy support · Hope · Shame · Intended effort · CVT · EFL learners

## Introduction

Language learning settings are replete with complex emotions that may directly or indirectly impact students' second language (L2) learning achievement (Pekrun & Perry, 2014). The introduction of positive psychology into language learning has broadened the research scope to include a range of positive emotions. However, despite the expansion of inquiries, the nomological network of emotions in language learning remains underexplored, particularly regarding emotions beyond the commonly examined trio of anxiety, boredom, and enjoyment. This limited focus has marginalized the investigation of other equally significant emotions, such as hope and shame, which merit further academic attention (Dewaele & Li, 2021; Shao et al., 2020).

These emotional experiences have been identified to be discernibly linked to teacher-related variables (Dewaele & Li, 2021), which are critical constructs related to the effort expended in learning (Dörnyei, 2001). Despite this established importance, research linking teacher-related variables with emotions has neglected the discrete emotions of hope and shame (Shao et al., 2020).

Hope, a notable positive emotion, is vital for generating interest and motivation, which permits learners to overcome the obstacles encountered across the language learning process (Wang et al., 2021). Language learners with high hopes tend to display various capabilities that may beneficially impact language learning, such as improved problem-solving, pressure resilience, and emotional control (Snyder, 2002). While, shame, an often-underemphasized negative emotion, can incur immediate debilitating effects on language learning (Wilson & Lewandowska-Tomaszczyk, 2019). Defined as an overwhelming emotional response, shame manifests in language learners as feelings of inferiority, perceived worthlessness, damaged self-image, rumination, confusion in thought, and inability to speak (Teimouri, 2018). Hence, a language learner experiencing shame would develop responses of withdrawal that may significantly reduce motivation to progress in learning. Whereas

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hope provides the intrinsic motivation for language learners to exert effort for prospective learning.

Existing research of teacher-related variables has sufficiently highlighted the importance of teachers to the potential for language learners to engage or persist in learning (Dörnyei, 2001). Among the variables, teacher autonomy support (TAS) has been identified as a critical antecedent of emotions (Putwain et al., 2020) with a strong connection to intended effort (IE). TAS refers to the behaviors and practices employed by instructors that nurture and enhance the learner's sense of autonomy and self-determination in the learning process (Reeve & Cheon, 2021). It is an act that identifies, encourages, and cultivates a conviction for self-directed learning by addressing the learner's preferences, goals, and psychological needs (Cheon et al., 2019). TAS has been identified to predict IE, which refers to the anticipated time, effort, and energy that learners intend to allocate toward future language learning exertions (Teimouri, 2018). In relation to hope, the TAS as an environmental factor of low control and high agency exhibits association with hope (Snyder, 2002). When empowered by TAS, language learners develop a greater belief in control over tasks, and exhibit an increased tendency to adapt learning strategies and make independent learning decisions (Ryan & Deci, 2020). Conversely, in low autonomy-supportive environments have been linked to a diminished sense of *self* and reduced problem-solving abilities in L2 learners, commonly a consequence of shame (Pekrun, 2006; Tze et al., 2014).

Although hope and shame are recognized as complex and significant emotions (Galmiche, 2018; Tze et al., 2014) within second language acquisition (SLA), empirical investigations into their mediating roles, particularly in relation to teacher-related factors and motivation, warrant expansion. While there are sporadic studies that are primarily quantitative and cross-sectional, the research in this area remains insufficiently developed and does not provide a comprehensive understanding of the relationship involved. Moreover, existing research examines hope and shame alongside other positive and negative emotions, thus providing only partial insight into the mediating effects of hope and shame (e.g., Fang et al., 2023; Shao et al., 2020; Shao et al., 2023; Teimouri, 2018). Despite prior inquiries empirically establishing separate associations between TAS, hope, shame, and IE among L2 learners (e.g., Tze et al., 2014; Yu et al., 2016), joint and simultaneous investigations examining these links in a single study remain scarce. Specifically, guided by the Control-Value Theory (CVT) of achievement emotions (Pekrun, 2006), which emphasizes the mediating role of achievement emotions between learning environments and learner behaviors, this study constitutes an initial attempt to examine the mediating effects of the hope and shame between TAS and IE. The study aims to

provide valuable insights into the underlying effects of the constructs, expand the repository of emotion exploration in SLA, and offer guidance for pedagogical strategies.

## Literature review

### Control value theory of achievement emotions

The CVT of achievement emotions (Pekrun, 2006) has been frequently adopted to provide an integrative framework for the analysis of achievement emotions. It categorizes achievement emotions based on a three-dimensional taxonomy of object focus, valence, and activation (Pekrun et al., 2023). Object focus organizes achievement emotions into activities and retrospective and prospective outcomes, while valence references the negative (unpleasant) or positive (pleasant) quality assigned to the achievement emotions, and activation encompasses the classification of achievement emotions into groups that either activate or deactivate learning (Pekrun & Perry, 2014). Based on this conceptualization, the achievement emotions of hope and shame are classified as outcome-oriented achievement emotions that activate learning, induced by past or future outcomes of learning activities. Despite hope and shame both activating learning, these emotions occupy opposite poles of the valence scale, with hope being positive and prospective, and shame being negative and retrospective (Pekrun & Perry, 2014). More specifically, prospective emotions are oriented toward anticipated outcomes, prompting students to invest effort and persevere toward learning goals. While retrospective emotions orient toward occurred outcomes, resulting in corrective actions by students to avoid similar errors.

In addition to the three-dimensional taxonomy, the CVT postulates a model that reciprocally links the achievement emotions with antecedents and learning outcomes. More specifically, various types of appraisals (e.g., subjective control and value, teacher characteristics, task demands) contribute to the achievement emotions experienced by learners, by which these emotions will act on other resources (e.g., cognition, engagement, motivation) to, ultimately, either improve or diminish achievement (Pekrun & Perry, 2014). Based on this theoretical foundation, in the present study, hope and shame are posited as achievement emotions, and the CVT is employed to investigate their role as mediators between the antecedent (TAS) and outcome (IE).

### Hope

Hope, from the purview of education, is characterized as a dynamic cognitive-motivational system by which a goal is established and achieved (Snyder, 2002). The system

conceptualizes hope into three components, namely *goal*, *agency*, and *pathways*. Within the structure, initially, a learner would establish goals that are perceived as attainable (goal). The goals' purpose is then recognized as valuable so that the learner would be appropriately motivated across its pursuit (agency), and finally, plans are devised and executed to overcome obstacles and achieve its realization (pathways) (Snyder, 2002). The three components combine to create a positive mental state for the learner, which is instrumental to the overall learning process, facilitating interest and motivation (Pekrun & Perry, 2014). Moreover, learners with high hopes have exhibited improved problem-solving, pressure resilience, and emotional control compared with peers, translating to higher engagement in classrooms (Snyder, 2002).

Extensive research within L2 learning contexts has recognized hope as a pivotal emotion commonly experienced by learners (Wang et al., 2021). Hope, similar to TAS, advocates for agentic action and causal agency, whereby language learners actively identify and employ optimal pathways to satisfy aspirations and elevate the involvement in self-direction and regulation to address and manage challenges and opportunities (Marques & Lopez, 2018). In essence, language learners empowered through TAS exhibit greater conviction for internal control and personal agency (Wang & Hu, 2022), resulting in learners experiencing an increased sense of hope (Rand et al., 2020).

Furthermore, hope has been identified as a construct that exerts a direct influence on the effort level of language learners. At the concept's core is the agency component which pertains to the *self's* ability to achieve controllable goals (Rand et al., 2020). It is an indicator of the effort invested by learners to devise and execute strategies to overcome obstacles, correlating with the belief to which an outcome can be influenced by the language learner's ability. In the Chinese EFL context, quantitative studies have established a positive correlation between hope and performance (Shao et al., 2020). Expanding upon previous studies, through a cross-sectional inquiry of 1,021 Chinese university students, Shao et al. (2023) discovered that hope, among other positive activating emotions, correlated positively and significantly with intrinsic and extrinsic motivation, which indicates high-hope learners are more inclined to plan for and undertake rigorous studies by expending more effort (Peixoto et al., 2015). Despite the established separate associations of hope to TAS and IE in language learning, its mediating effect between TAS and IE remains underexplored.

## Shame

For EFL learners, the negative retrospective emotion of shame is a self-conscious emotion that pertains to the *self*

(Galmiche, 2018). This achievement emotion typically arises from the manner in which the *self* is evaluated by others as a consequence of one's shortcomings or errors (Teimouri, 2018). For instance, a language learner may experience shame after receiving a low score on an important examination, which could have been prevented with more preparation, or receiving negative feedback on incorrectly completed tasks in a group setting (Pekrun, 2006). Exposures to these situations would precipitate a sense of the *self* being diminished or inadequate, triggering a range of debilitating psychological ailments that impede language learning, such as anxiety, fear, self-depreciating tendencies, chronic negative self-appraisal, rumination, and avoidance of risk (Galmiche, 2018; Wilson & Lewandowska-Tomaszczyk, 2019). Particularly, within the Chinese context, shame is inherently social and deeply molded by interpersonal relationships. The avoidance of shame takes precedence, functioning as a social impetus to circumvent disapproval, rejection, humiliation, and isolation from interpersonal interactions (Fang et al., 2023). In academic settings, this behavior of avoidance is considered an appropriate reaction to failure in academic settings (Hau & Ho, 2010; Shao et al., 2019).

As a negative activating emotion, shame can have complex and variable effects on student achievement (Pekrun, 2006). Shame tends to undermine intrinsic motivation, attention, elaboration, and self-regulation, while simultaneously strengthening extrinsic motivation, driving students to invest more effort to avoid failure (Pekrun et al., 2011; Shao et al., 2019, 2020). However, despite its potential to motivate effort, shame often correlates negatively with overall self-reported learning effort and academic performance (Pekrun et al., 2011). Teimouri (2018) validated this through a study involving 174 English-major university students in Iran, revealing that shame significantly and negatively influenced L2 learners' willingness to communicate and attention. Although the negative effect of shame on intended effort was negligible, it was identified as a strong negative predictor of language achievement. Teimouri concluded that the behaviors triggered by shame diminish L2 learners' language performance by reducing their motivation to take advantage of learning opportunities, engage in L2 social interactions, and stay attentive in class. More recently, Shen et al. (2023) studied 300 Chinese university EFL students and found that shame negatively predicted the frequency of self-regulated learning strategy use, with significant effects primarily on persistence strategies. This aligns with earlier claims by Cook (2006), suggesting that shame prompts withdrawal behaviors, preventing learners from fully investing in L2 learning activities, which in turn harms both motivation and L2 achievement. Additionally, Shao et al. (2023) explored the link between shame and motivation among 1,021 university-level EFL learners. Their findings

revealed a significant negative relationship between shame and intrinsic motivation, though no significant association was found between shame and extrinsic motivation. Despite the growing interest in the shame-motivation relationship, the link between shame and IE among L2 learners remains underexplored, especially considering its prevalence in the Chinese EFL context (Fang et al., 2023; Shen et al., 2023).

Moreover, the experience of shame is linked to TAS, primarily through its impact on students' perceptions of control, competence, and self-worth within the learning environment (Pekrun & Perry, 2014; Soenens et al., 2012). In classrooms where teachers promote autonomy, students tend to develop a sense of ownership over their learning process, which can mitigate feelings of shame typically associated with failure or underperformance. Conversely, in environments of low autonomy support—where students experience heightened control or critical judgment from the teacher—shame is more prone to arise. In such settings, students may interpret failure as a sign of personal inadequacy, stemming from a perceived lack of competence or fear of negative evaluation (Teimouri, 2018). The absence of autonomy support may exacerbate these emotions, as students feel less empowered to take control of their learning and are more susceptible to shame-based reactions. Considering shame's extensive presence in EFL settings, devastating impact on language learning, and contrasting implications across cultural contexts, an exploration of the emotion's relationship with its antecedents and outcomes is essential to clarify its role in language learning.

### Teacher autonomy support

Teacher-related variables have been identified as a critical factor that endorse emotional experiences and facilitate the language learning efforts of students. TAS is characterized by the interpersonal sentiment and behavior that teachers provide during instruction. It facilitates and bolsters students' proclivity for engaging in self-directed learning, thereby contributing to the achievement of desired objectives (Cheon et al., 2019). Learners empowered by TAS tend to experience enhanced cognitive appraisals (Pekrun & Perry, 2014), report pleasurable emotions (Putwain et al., 2020), and contribute more to adaptive classroom functions (Reeve & Cheon, 2021). Moreover, extensive longitudinal evidence provides a well-founded consensus that TAS is associated with enhanced classroom engagement, suggesting that it may foster greater intrinsic motivation among learners, thereby increasing their willingness to engage in activities for the pursuit of enjoyment, novelty, and explore new avenues to extend capabilities (Ryan & Deci, 2020). Moreover, the increased sense of internal control, as encouraged by TAS (Pekrun & Perry, 2014), implies that learners will develop a stronger perception of agency over their

situational and experiential contexts. This agency exerts a positive influence on problem-solving, resilience, motivation, and personal responsibility, leading to increased effort in learning activities (Wang & Hu, 2022).

Regarding the importance of TAS to learning, existing literature has established associations between TAS and learning outcomes in general education and EFL. In a study within the Italian context, Filippello et al. (2020) identified that TAS positively predicted achievement, indicating students pursued more opportunities to intrinsically strive for improvement with sustained and meaningful effort dedicated to learning. In inquiries specific to EFL, Zarrinabadi et al. (2021) revealed that TAS predicted growth mindsets and willingness to communicate, suggesting that EFL learners who perceived higher TAS exhibited heightened resilience, openness to feedback, and a positive approach to challenges, in addition to possessing greater willingness to use English. In seminal studies, Liu et al. (2023) established the assertion that TAS positively predicted engagement in EFL learning, shaping their motivational states, and resulting in greater tendency to invest effort and partake in learning activities.

Furthermore, research on TAS in the EFL context has predominantly focused on its relationship with personality traits and motivational factors (Liu et al., 2023), often overlooking its connection to emotional experiences. Positive emotions have been identified as an important construct directly related to TAS (Lazarides & Buchholz, 2019), contributing to the learner's willingness and capacity to execute tasks for enhanced engagement. The availability of choices, as perceived through TAS, results in positive appraisals, thereby permitting the experience of positive emotions, which ultimately impacts learning outcomes. Moreover, TAS has been recognized for its capacity to mitigate negative emotions, evidenced by findings that observed a significant and negative correlation between TAS, anxiety (Yu et al., 2016), and boredom (Tze et al., 2014). The existing studies relating to TAS and achievement emotions in language learning have yet to extensively analyze emotional variables beyond enjoyment, boredom, and anxiety (Tze et al., 2014; Yu et al., 2016), thereby necessitating further exploration of discrete emotions, particularly hope and shame.

### Intended effort

Intended effort (IE) refers to the amount of time, effort, and energy students intend to expend in the future processes of language learning (Teimouri, 2018) and is often regarded as an important descriptor of a language learner's motivation. Within EFL contexts, IE has been frequently adopted for assessing learners' motivations (Teimouri et al., 2020) among other behavioral outcomes. Existing studies have sufficiently highlighted the importance of teachers

in relation to the effort learners invest in language learning (Dörnyei, 2001). Moreover, recent research of IE has indicated a connection between IE and foreign language emotions. Positive emotions are positively correlated with IE, facilitating language learning, while negative emotions correlate negatively with IE, thereby hindering learning progress (Shao et al., 2023; Teimouri, 2018). Despite prior findings that indicate an association between achievement emotions and IE, inquiries determined to clarify the specific relationship of emotions to IE have produced inconsistent findings (Fraschini & Tao, 2023). As a negative activating emotion, shame, according to the CVT (Pekrun, 2006), may exert variable effects on learning. Moreover, the cultural specificity and prevalence of shame in the Chinese cultural context (Fang et al., 2023) necessitate further investigation into the underlying effect of shame on IE. Similarly, hope, a positive activating emotion, has received insufficient attention regarding its relationship with IE in the Chinese EFL context, with only limited studies offering partial insights into its link to motivation (e.g., Shao et al., 2023).

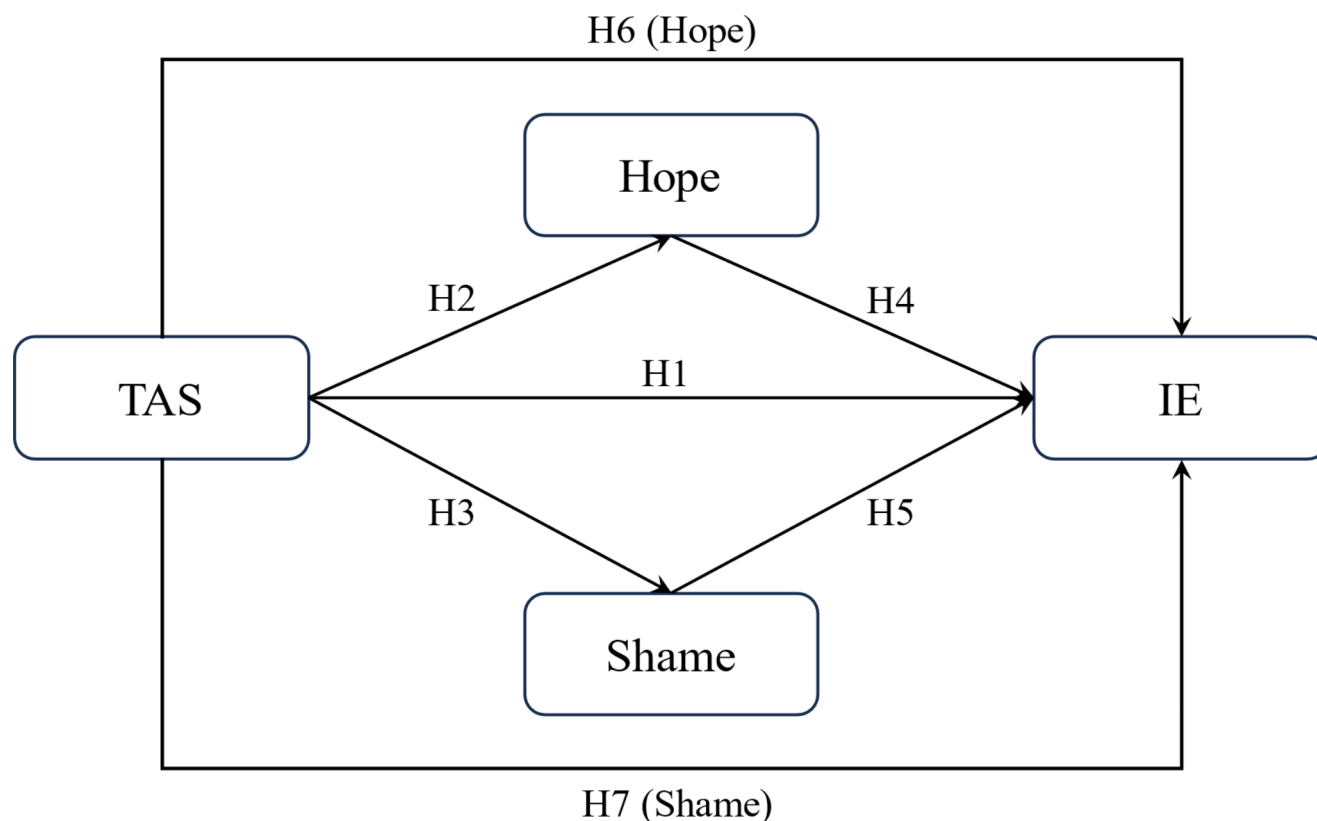
### The present study

Based on the literature reviewed, several areas for exploration were highlighted. Earlier cross-sectional research on

achievement emotions in EFL has only partially investigated the effects of hope and shame alongside other emotions (e.g., Shao et al., 2020; Shao et al., 2023; Teimouri, 2018). Additionally, fewer studies on emotions have been situated within specific cultural frameworks, despite the culturally specific nature of certain emotions, such as shame in the Chinese context (Fang et al., 2023; Shao et al., 2019; Shen et al., 2023). While prior research has established separate associations between TAS, hope, shame, and IE among language learners (e.g., Tze et al., 2014; Yu et al., 2016), studies that examine these relationships collectively and simultaneously in a single study remain scarce. Drawing upon the theoretical framework of CVT (Pekrun, 2006), alongside empirical evidence, the present study seeks to examine the mediating role of two critical yet under-investigated achievement emotions—namely, hope and shame—within the relationship between TAS and IE among Chinese EFL learners.

Figure 1 presents the hypothesized model. The hypotheses are proposed as follows:

- H1: TAS positively predicts IE directly.
- H2: TAS positively predicts hope directly.
- H3: TAS negatively predicts shame directly.
- H4: Hope positively predicts IE directly.



**Fig. 1** Hypothesized model. Note. TAS = Teacher autonomy support; IE = Intended effort



H5: Shame negatively predicts IE directly.

H6: Hope positively mediates the relationship between TAS and IE.

H7: Shame negatively mediates the relationship between TAS and IE.

## Methodology

### Participants

In this study, 402 university students were recruited from the English major (168, 41.8%) and non-English majors (234, 58.2%) at a prominent university in northern China. Adopting a convenience sampling approach, participants were selected across all stages of the undergraduate level, encompassing freshmen (146, 36.3%), sophomores (107, 26.6%), juniors (57, 14.2%), and seniors (92, 22.9%). The demographic composition of the sample comprised 289 (71.9%) females and 113 (28.1%) males, with an age range of 18 to 23 years ( $M=20$ ,  $SD=1.49$ ). All participants were native Chinese speakers who had been learning English as a second language for a minimum of six years. According to their English scores in the Gaokao (National Higher Education Entrance Examination), which is administered once a year in China, the participants were classified as having an intermediate level of EFL proficiency (B1 level in the Common European Framework of Reference for Languages). This ensured consistent English proficiency levels across both groups, thus mitigating potential disparities and allowing for a more accurate assessment of language-related emotional responses.

### Instruments

Two sections were included in the composite questionnaire: the initial section aimed to collect participants' demographic information (i.e., gender, age, major, grade, years of learning EFL, and English scores in the *gaokao*). Subsequently, the following section presented four scales (i.e., TAS, hope, shame, and IE).

#### Teacher autonomy support

The 6-item abbreviated version of the Learning Climate Questionnaire (LCQ; Black & Deci, 2000) was adapted to assess TAS. Minor modifications were made to the items of the scale to ensure relevance to the EFL context. For example, the original item "My teacher conveys confidence in my ability to do well in this course" was modified to "My English teachers convey confidence in my ability to do well

in the English course" to specify the context of English language learning. These modifications were necessary to ensure that the items were directly applicable to the participants' experiences in learning English as a foreign language. The respondents' perceived TAS was measured on a 7-point Likert-type scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The scale demonstrated high internal consistency in this study (Cronbach's  $\alpha=0.925$ ).

#### Hope

To measure EFL learners' hope, this study utilized an adapted version of the 4-item Hope Subscale of the Achievement Emotions Questionnaire-Revised (AEQ-R; Pekrun et al., 2023) with minor modifications tailored to the specificities of the EFL context. For example, the original item "I have great hope that my abilities will be sufficient" was modified to "I have great hope that my English abilities will be sufficient" to focus on the learners' hope in the context of their English language proficiency and learning. The participants' hope was measured on a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The internal consistency of the scale in this study was confirmed to be good (Cronbach's  $\alpha=0.801$ ).

#### Shame

To measure EFL learners' shame, the 6-item Shame Subscale of the Achievement Emotions Questionnaire-Revised (AEQ-R; Pekrun et al., 2023) was appropriately modified for suitability to an EFL context. For instance, the original item "My poor performance embarrasses me" was adjusted to "My poor English performance embarrasses me" to reflect the context of English language learning. The respondents' shame was measured on a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). This study has exhibited satisfactory internal consistency of this scale (Cronbach's  $\alpha=0.892$ ).

#### Intended effort

Ryan's (2009) intended learning effort scale with 8 items was adopted in this study. Ryan's initial validation of the scale involved 2,397 Japanese EFL learners and demonstrated satisfactory reliability (Cronbach's  $\alpha=0.860$ ). A sample item is "I can honestly say that I am really doing my best to learn English." The respondents' IE was assessed on a 6-point Likert-type scale, ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). The internal consistency of the scale in this study was satisfactory (Cronbach's  $\alpha=0.890$ ).

## Data collection

The translation process followed a rigorous back-translation method to ensure accuracy and cultural relevance. Initial translations and back-translations were reviewed by experts in translation and applied linguistics. Cultural nuances were addressed through contextual modifications, sensitivity to cultural expressions of emotions, and pilot testing. A pilot test was conducted with a small sample of EFL learners ( $n=50$ ) to assess the clarity, relevance, and reliability of the modified items. Feedback from pilot tests with Chinese EFL learners helped refine the items, ensuring they were culturally appropriate and accurately captured the intended constructs. Prior to commencing the study, the authors ensured that all ethical standards for research involving human participants were adhered to. The research was classified as minimal risk, as it involved the administration of standard educational surveys that did not include any interventions or procedures that could adversely affect the participants' well-being. Participants were informed of the research aims and assured of the confidentiality of the data collected, which would be used exclusively for the purposes of this study. Participation was entirely voluntary, with all respondents providing informed consent and being advised of their right to withdraw from the study at any time. After obtaining consent from participants, questionnaires were distributed to respondents using an internet crowdsourcing server specifically designed for survey research, <http://www.wjx.cn/>. This platform was chosen for its accessibility, convenience, and wide reach, allowing participants to complete the survey at their convenience and facilitating the recruitment of a large and diverse sample from different departments within the university. To ensure data quality and representativeness, we employed several measures: screening and recruitment procedures to capture a diverse sample, pilot testing to refine the survey, rigorous data cleaning to exclude inconsistent responses, and attention-check questions to mitigate response bias. Despite the potential limitations of online surveys, these measures helped to enhance the reliability and validity of the collected data. Completion of the inquiries required approximately 10–15 min. The researchers rigorously adhered to the ethical norms throughout the entirety of the data collection process.

## Data analysis

Statistic tools SPSS 26 and Mplus 8.3 (Muthén & Muthén, 2017) were adopted to analyze the collected data. The validity of the questionnaires was examined using confirmatory factor analysis (CFA). Descriptive analysis and Pearson bivariate correlation analysis were performed on the dataset. Thereafter, the hypothesized model was tested utilizing

structural equation modeling (SEM) with Maximum Likelihood serving as the estimation method. The following fit indices with the corresponding threshold values accounted for the evaluation of the structural model: Tucker–Lewis Index (TLI) and Comparative Fit Index (CFI) were expected to exceed 0.90, whereas the Standardized Root Mean Square (SRMR) and Root Mean Square Error of Approximation (RMSEA) were anticipated to be below 0.08 (Kline, 2011), and Chi-square divided by degree of freedom ( $\chi^2/df$ ) was deemed acceptable if below 3 (Tseng & Schmitt, 2008). The mediation effects were explored employing a bootstrap analysis of 5,000 samples with bias-corrected 95% confidence intervals.

## Results

### Preliminary analyses

CFA was performed to assess the construct validity of the measurement models. To further improve the model fit, an item from the hope scale with a standardized loading estimate of 0.428 was excluded, as Hair et al. (2010) suggest these estimates should exceed 0.5. The final CFA model fit indices were confirmed to have reached an acceptable level (See Table 1).

The descriptive statistics (see Table 2) confirmed that all skewness and kurtosis values were within acceptable normality ranges (Kline, 2011). The correlational analysis (see Table 2) indicated that TAS was positively linked to hope ( $r=0.569$ ,  $p<0.001$ ), negatively correlated with shame ( $r=-0.193$ ,  $p<0.001$ ), and positively associated with IE ( $r=0.413$ ,  $p<0.001$ ). Shame was negatively correlated with hope ( $r=-0.201$ ,  $p<0.001$ ) and IE ( $r=-0.291$ ,  $p<0.001$ ), while hope exhibited a positive correlation with IE ( $r=0.432$ ,  $p<0.001$ ). The analysis of convergent validity (as shown in Table 2) indicated that all scales demonstrated satisfactory values, with the average variance extracted (AVE) exceeding 0.5. The square root of AVE was greater than the inter-correlations between variables, thereby affirming the discriminant validity of the measurement scales (Fornell & Larcker, 1981).

**Table 1** CFA results

Measures	$\chi^2/df$	TLI	RMSEA	CFI	SRMR
Acceptance Threshold	< 3	> 0.9	< 0.08	> 0.9	< 0.08
TAS	1.959	0.992	0.049	0.997	0.014
Hope	0.000	1.000	0.000	1.000	0.000
Shame	2.894	0.979	0.069	0.992	0.017
IE	2.372	0.976	0.058	0.987	0.027

Note. TAS = Teacher Autonomy Support; IE = Intended Effort

**Table 2** Correlation, descriptive statistics, validity, and reliability results ( $N=402$ )

Constructs	TAS	Hope	Shame	IE
TAS	<b>0.808</b>			
Hope	0.569***	<b>0.820</b>		
Shame	-0.193***	-0.201***	<b>0.746</b>	
IE	0.413***	0.432***	0.291***	<b>0.713</b>
AVE	0.653	0.673	0.557	0.508
CR	0.918	0.857	0.882	0.891
Mean	5.58	4.44	2.88	4.30
SD	1.07	0.92	0.64	0.94
95%CI	[5.48, 5.69]	[4.38, 4.50]	[2.78, 2.97]	[4.21, 4.40]
Skewness	-0.601	-0.889	-0.247	-0.182
Kurtosis	0.182	-0.181	-0.440	-0.230

Note. AVE = average variance extracted; CR = composite reliability; numbers in bold fonts are square roots of the AVE; off diagonals are correlation statistics; \*\*\*  $p < 0.001$ ; TAS = Teacher Autonomy Support; IE = Intended Effort

### Path analyses

SEM was applied to investigate the direct and indirect effects of TAS, hope, and shame on IE. The analysis evidenced a good model fit ( $\chi^2/df=2.174 < 3$ ,  $TLI=0.950 > 0.9$ ,  $CFI=0.958 > 0.9$ ,  $SRMR=0.062 < 0.08$ ,  $RMSEA=0.054 < 0.08$ ). Path analysis results (Table 3) demonstrated that TAS positively affected hope ( $\beta=0.590$ ,  $p < 0.001$ ) and negatively impacted shame ( $\beta = -0.217$ ,  $p < 0.001$ ). Meanwhile, IE was positively predicted by TAS ( $\beta=0.233$ ,  $p < 0.001$ ) and hope ( $\beta=0.254$ ,  $p < 0.001$ ) while negatively predicted by shame ( $\beta = -0.217$ ,  $p < 0.001$ ).

### Mediation analyses

A bias correction bootstrap analysis, utilizing 5,000 samples, was employed to assess the mediation effects. The results (see Table 4) indicated that the total effects (0.429,  $p < 0.001$ ) of TAS on IE were significant. The direct effects (0.233,  $p < 0.001$ ) from TAS to IE were significant, as were the indirect effects of TAS on IE mediated by hope (0.150,  $p < 0.001$ ) and shame (0.045,  $p < 0.05$ ). The significance of these indirect effects was affirmed due to the absence of zero within the 95% confidence intervals. The mediation model is presented in Fig. 2.

**Table 3** Path coefficients of SEM

Path Relationship	B	Weight	S.E.	C.R.	P
TAS→Hope	0.590	0.362	0.038	15.351	***
TAS→Shame	-0.209	-0.192	0.054	-3.849	***
TAS→IE	0.233	0.233	0.062	3.763	***
Hope→IE	0.254	0.413	0.062	4.087	***
Shame→IE	-0.217	-0.236	0.050	-4.382	***

Note. \*\*\*  $p < 0.001$ ; TAS = Teacher Autonomy Support; IE = Intended Effort

## Discussion

The study reveals that TAS positively predicted EFL learners' IE ( $\beta=0.233$ ), corroborating H1 and aligning with previous research findings (Filippello et al., 2020; Liu et al., 2023; Wang & Hu, 2022). The results can be further explained by drawing upon the principles of SDT, which posits that motivated behaviors may vary contingent upon the levels of control or autonomy perceived by an individual in their pursuit of goals (Ryan & Deci, 2020). L2 learners who perceive their autonomy to be supported by teachers are more predisposed to experience a sense of ownership and control over their L2 learning endeavors. This perception of autonomy support fosters a deeper sense of intrinsic motivation (Liu et al., 2023), as learners are driven by their inherent interest in the material rather than external incentives or pressures. Consequently, L2 learners are more inclined to be intrinsically motivated to engage in learning activities, finding the activities to be inherently enjoyable and satisfying (Liu et al., 2023). The heightened intrinsic motivation serves as a catalyzing force, igniting learners' interest in the learning process, and kindling a passion for knowledge acquisition and skill development. As L2 learners' intrinsic motivation intensifies, greater enthusiasm, effort, and persistence will be dedicated to learning activities (Liu et al., 2023). This finding underscores the importance of cultivating classroom environments that empower students to assume ownership of learning, thereby resulting in increased investment of effort and potentially improved academic outcomes.

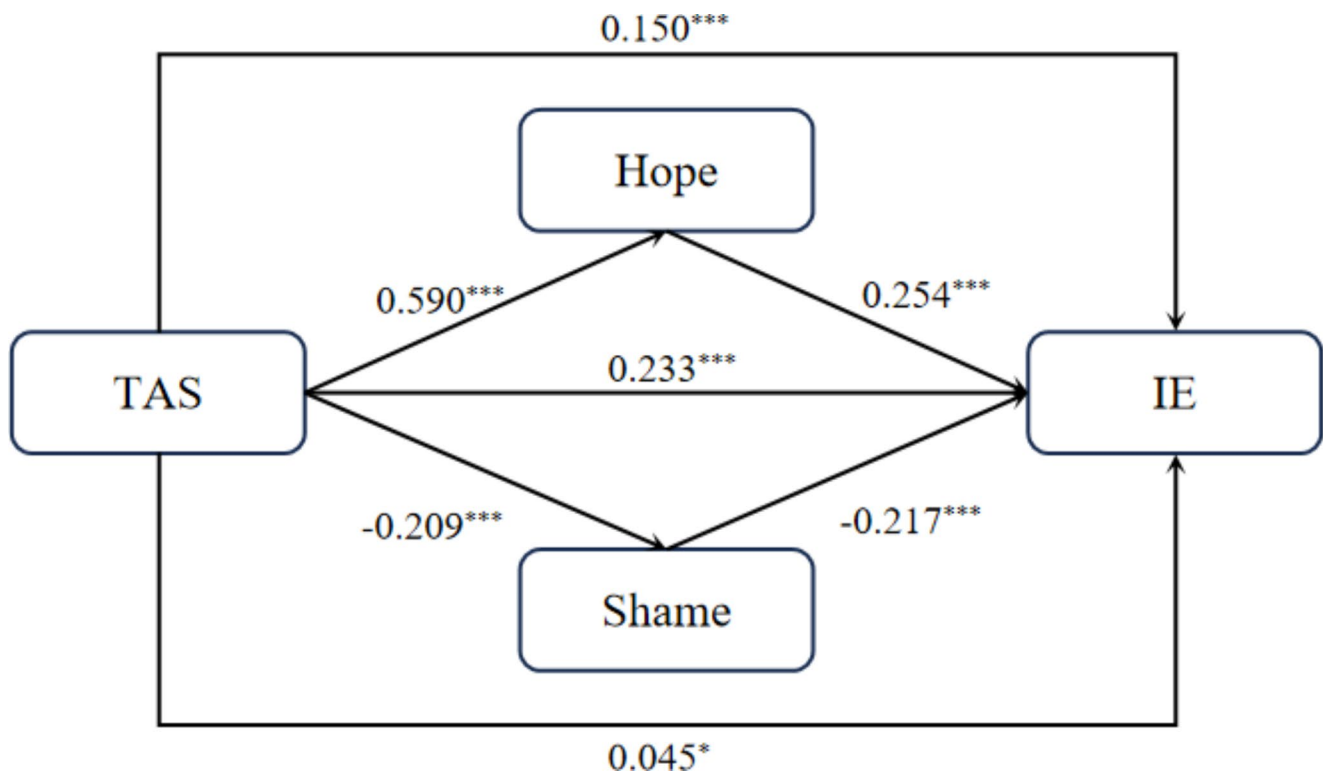
Within the purview of this study, hope emerges as a significant predictor of IE ( $\beta=0.254$ ), corroborating H4 and resonating with the findings of prior research (Peixoto et al., 2015; Shao et al., 2023). EFL learners who experience a sense of hope, characterized by an optimistic, goal-directed cognitive disposition and a belief in their capacity to attain desired outcomes, exhibit a greater inclination to exert effort toward academic objectives (Peixoto et al., 2015). L2 learners with high hopes demonstrate adeptness in addressing challenges, navigating obstacles, and ultimately realizing aspirations (Snyder, 2002), thereby displaying more

**Table 4** Mediation effects

	Effect value	Boot standard error	Bias-Corrected 95%CI		Relative mediating effect
			Lower	Upper	
Total effects	0.429***	0.049	0.331	0.526	-
Direct effects	0.233***	0.067	0.103	0.365	-
Indirect effects	0.195***	0.045	0.120	0.303	45.45%
Hope as the mediator	0.150***	0.043	0.076	0.248	34.96%
Shame as the mediator	0.045*	0.018	0.017	0.091	10.49%

Note. \*  $p < 0.05$ ; \*\*\*  $p < 0.001$





**Fig. 2** Mediation model. Note. TAS = Teacher autonomy support; IE = Intended effort; \*  $p < 0.05$ ; \*\*\*  $p < 0.00$

pronounced engagement in educational ventures and resilience in pursuing and sustaining L2 learning goals (Marques & Lopez, 2018). This relationship may be attributed to the enhanced sense of agency observed in high-hope learners (Rand et al., 2020), which facilitates effective navigation of academic tasks and bolsters the exertion of IE. Essentially, hope equips learners with the ability to maintain an optimistic outlook, persevere through adversity, and actively pursue academic goals. Thus, this finding is consistent with the CVT (Pekrun, 2006), which asserts that hope, as a positive and prospective achievement emotion, activates academic learning.

Furthermore, this study reveals a significant link between TAS and hope ( $\beta = 0.590$ ) among language learners, a relationship that is validated by existing research and affirms H2 (Marques & Lopez, 2018; Wang & Hu, 2022). TAS, characterized by supportive behaviors and interpersonal sentiments from teachers, engenders an environment conducive to the cultivation of hope, aligning with the tenets of CVT, which emphasizes the critical role of teacher behavior in creating supportive learning environments and promoting positive emotions (Pekrun, 2006). This finding aligns with previous research that highlights the importance of supportive learning environments in developing language learners' positive emotional experiences (Dewaele & Li, 2021; Lazarides & Buchholz, 2019; Putwain et al., 2020). Distinctively, this study represents a pioneering effort within the field of L2

research, as it systematically explores the intricate relationship between TAS and hope among L2 learners.

Conversely, this study establishes the detrimental impact of shame on L2 learners' IE ( $\beta = -0.217$ ), lending credence to H5 and reflecting findings from prior research (Shao et al., 2023; Teimouri, 2018), as well as theoretical assumptions regarding shame as a trigger for avoidance or withdrawal responses (Galmiche, 2018; Wilson & Lewandowska-Tomaszczyk, 2019; Tangney & Dearing, 2003). Shame, arising from a perceived sense of exposure as defective or unattractive to others, compels learners to seek escape from shame-inducing situations (Tangney & Dearing, 2003). This adverse self-perception erodes learners' confidence and their belief in the capacity for achieving favorable outcomes, resulting in the reduction of their willingness to invest effort in academic pursuits. Within the context of L2 acquisition, shame may manifest as avoidance or withdrawal behaviors during L2 usage, such as avoiding conversations and intentionally disengaging from L2 classroom activities or social interactions, thereby diminishing L2 exposure and hindering motivation (Teimouri, 2018). This finding is consistent with Cook's (2006) identification of the shame-fear sequence, wherein the apprehension of experiencing shame acts as a deterrent against learners employing the target language in social settings. Furthermore, Galmiche (2018) asserts that repeated experiences of shame may prompt a passive attitude and withdrawal from

L2 learning, in addition to a reluctance to communicate in the target language. This negative and retrospective emotion, as postulated by the CVT (Pekrun, 2006), induces a pervasive sense of inadequacy and failure that undermines students' motivation and willingness to engage in language learning.

Moreover, the findings of this study highlight the significant predictive influence of TAS on shame ( $\beta = -0.217$ ) among L2 learners, affirming H3 and reinforcing earlier research indicating that TAS can mitigate negative emotions (Tze et al., 2014; Yu et al., 2016). According to the CVT, achievement emotions are inextricably tied to specific learning activities or outcomes and are influenced by various appraisals, including perceptions of control and value (Pekrun & Perry, 2014). In this study, TAS serves as a contextual factor that shapes learners' perceptions of control and value within the language learning environment. By providing autonomy, support, and acknowledgment of learners' needs, teachers create a supportive atmosphere that enhances learners' perceived control and cognitive appraisals of learning experiences (Pekrun & Perry, 2014). Consequently, learners may experience reduced levels of shame, as the perception of inadequacy and self-doubt are mitigated by the supportive environment fostered by TAS.

In alignment with the CVT of achievement emotions, the findings extend existing research by systematically examining the mediating roles of hope and shame, which have been underexplored between TAS and IE. By identifying these mediating pathways, the study provides nuanced insights into how instructional strategies influence learners' emotional and motivational states. The mediating influence of hope in the relationship between TAS and IE ( $\beta = 0.150$ ) underscores the instrumental role of emotion as a mechanism through which TAS influences motivational states and learning behaviors (supporting H6). This finding corroborates existing research which proposes that supportive and autonomy-enhancing educational environments foster a sense of hope among learners (Pekrun, 2006; Pekrun & Perry, 2014). Hope, characterized by goal-directed thinking and the perceived capability to achieve these goals, is amplified in environments where learners feel empowered and autonomous (Snyder, 2002; Pekrun, 2006). Such settings foster a heightened sense of agency, bolstering learner's confidence and intrinsic motivation to engage in and sustain their learning efforts (Marques & Lopez, 2018; Wang & Hu, 2022). Consequently, this positive achievement emotion activates motivation and enhances educational engagement, aligning with prior findings that link high levels of hope to improved problem-solving abilities, emotional control, and classroom engagement (Snyder, 2002; Shao et al., 2020). The results further substantiate that autonomy-supportive tasks and environments, by satisfying individuals'

need for autonomy, enhance perceived control and intrinsic value in learning activities, thereby nurturing positive emotions and improving motivation (Pekrun & Perry, 2014). These insights contribute to a deeper understanding of the underlying motivational dynamics in language learning, emphasizing the pivotal role of TAS in promoting positive motivational outcomes through the encouragement of hope.

Furthermore, the research identified the role of shame as a mediating factor, though weaker ( $\beta = 0.045$ ), between TAS and IE, supporting H7 and aligning with the three-dimensional taxonomy model proposed by the CVT (Pekrun, 2006). Previous research has identified shame as a self-conscious and negative emotion that arises from perceptions of failure or inadequacy, often triggered by external evaluations or comparisons (Galmiche, 2018; Teimouri, 2018). This observation corroborates the findings of Soenens et al. (2012), who demonstrated that learners subjected to restrictive or controlling instruction methods may experience shame stemming from feelings of inadequacy or failure. In educational settings, particularly those with insufficient autonomy support, learners may internalize negative assessments, leading to decreased motivation and avoidance behaviors. The negative relationship between TAS and shame, as evidenced in the study's results, suggests that supportive teaching practices can mitigate feelings of shame by enhancing students' perceived control and value within the learning environment (Pekrun & Perry, 2014). These findings are consistent with previous studies indicating that high autonomy support reduces the intensity and occurrence of negative emotions, thereby fostering a more conducive learning atmosphere (Yu et al., 2016; Tze et al., 2014). The identification of shame as a mediator underscores the adverse impact of authoritarian teaching approaches on learners' emotional welfare and academic drive, emphasizing the necessity of cultivating autonomy-supportive educational environments to mitigate shame and enhance student engagement and diligence.

It was revealed that the mediating effect of shame between TAS and IE was comparatively weaker than that of hope. The findings align with the CVT's proposition that negative activating emotions can exert variable effects on learning (Pekrun, 2006). Shame tends to undermine intrinsic motivation, attention, elaboration, and self-regulation, while simultaneously strengthening extrinsic motivation, compelling students to invest greater effort to avoid failure (Pekrun et al., 2011; Shao et al., 2019, 2020). This dynamic is particularly evident in the Chinese learning contexts, where shame is prevalent, the fulfillment of social obligations toward authority figures and collectives is emphasized, and self-cultivation and self-perfection in learning are prioritized (Fang et al., 2023). In this context, students are expected to exert effort in academic endeavors, and

the inability to avoid academic failure is generally viewed as a consequence of insufficient effort (Hau & Ho, 2010). As such, Chinese students who experience shame may be self-prompted to invest effort in L2 learning to satisfy their extrinsic motivation (Pekrun & Perry, 2014; Shen et al., 2023). However, despite its potential to motivate effort, shame frequently correlates negatively with overall self-reported learning effort and academic performance (Pekrun et al., 2011). This explanation may account for the negative prediction of Chinese EFL learners' shame to IE, albeit with a small effect. These findings also corroborate Teimouri's (2018) study, which similarly reported a negligible negative effect of shame to IE among Iranian L2 learners. Moreover, the small effect of shame on L2 learning is consistent with recent studies indicating that the links between students' emotions and their foreign language performance are higher for positive activating emotions than negative activating emotions (e.g., Shao et al., 2020).

### Implications, limitations, and suggestions for future research

This study provides a significant theoretical contribution by integrating the CVT of achievement emotions, specifically hope and shame, with the examination of motivation (TAS and IE) within the context of language learning. By applying the CVT to interpret the influence of autonomy-supportive instruction practices on learners' emotional experiences and motivational states, the study expands previous understanding of the complex interplay between motivation and emotion in the Chinese EFL contexts. It extends the existing research by investigating the roles of hope and shame, two less-investigated achievement emotions, within language learning contexts. Furthermore, the identification of hope and shame as mediators between TAS and IE clarifies the underlying mechanisms through which instructional strategies impact the engagement and behavioral outcomes of Chinese language learners.

The study presents several pedagogical implications, particularly stressing the importance of creating autonomy-supportive learning environments in which learners are empowered to make independent decisions and take ownership of their language learning process. These principles are particularly pertinent in the context of Chinese classrooms, where a traditionally hierarchical and authoritative structure often restricts student autonomy (Zhou et al., 2009), and shame-inducing tactics are frequently employed as a means of motivating students to activate learning (Fang et al., 2023). To support educators in applying these findings effectively in real-world settings, the following practical strategies provide expanded guidance on promoting autonomy, enhancing hope, and reducing shame.

An effective strategy for promoting autonomy involves providing students with meaningful options throughout the learning process. By offering a variety of pathways for completing tasks or assignments, teachers can enhance engagement and motivation. For example, students could be presented with the option to either write a research paper, create a video, or deliver an oral report on a designated subject. Moreover, allowing students to exercise agency in determining the format in which their tasks are completed grants a sense of control over their workload. This approach enables students to personalize their learning experience to individual strengths and interests (Yu et al., 2016), thereby increasing motivation. Additionally, integrating flexibility in the pace of learning can further support autonomy. For instance, in project-based learning contexts, students can select topics that resonate with their interests and collaboratively establish realistic deadlines with the teacher. In the context of an EFL lesson on cultural studies, students might opt to explore specific aspects such as music, art, or social traditions, progressing through the material and tasks at a pace that suits their level of comprehension and availability. This approach not only fosters autonomy but also ensures a structured learning environment that maintains student accountability and progress.

Encouraging the development of hopeful thinking among students can be accomplished through the implementation of structured goal-setting exercises, enabling them to articulate realistic and attainable personal learning objectives (Snyder, 2002). Incorporating such exercises at the commencement of the academic year or instructional unit offers students a foundation upon which to identify specific learning goals for the course. Teachers can periodically revisit these goals with students to encourage reflective self-assessment on progress and guide students in devising actionable measures for overcoming potential challenges (Rand et al., 2020). By assisting students to anticipate obstacles and formulate proactive solutions, teachers can promote resilience and nurture a sense of optimism. Furthermore, students should be encouraged to visualize success—whether that's imagining themselves confidently speaking in English or completing a challenging task—which serves as a powerful motivator. However, it remains imperative that these goals are kept attainable to avoid discouragement, as setting small, achievable objectives tied to visible progress can bolster students' confidence and determination.

When not appropriately managed with care, feedback has the potential to become a source of shame, particularly in highly hierarchical educational settings. To mitigate the risk of learning adverse risk, it is advisable for teachers to deliver constructive feedback in private or less exposed venues, thereby enabling Chinese students to receive critical guidance without the fear of public embarrassment (Shen

et al., 2023; Wilson & Lewandowska-Tomaszczyk, 2019). Conducting one-on-one feedback sessions provides students with a secure and non-judgmental space in which they can process their progress and address their mistakes. By focusing on specific behaviors rather than criticizing the student as a whole, teachers can help students internalize feedback as an opportunity for growth (Teimouri, 2018). Additionally, teachers should endeavor to balance feedback by pairing constructive criticism with positive reinforcement. For instance, when a student encounters difficulties with grammar, acknowledging their effort in mastering vocabulary prior to offering suggestions for improvement can reinforce a growth mindset. This approach encourages students in the Chinese context to perceive errors as a valuable part of the learning process, rather than as failures.

At the policy level, institutions and educators are encouraged to adopt holistic assessment frameworks, which extend beyond measuring academic achievement to encompass factors such as effort, engagement, and improvement over time. By valuing these dimensions, teachers are positioned to recognize students' individual progress and strengths, fostering a more supportive and less punitive learning environment that reduces shame and promotes perseverance. Policies that encourage continuous professional development in these areas will ensure that teachers are adept at implementing TAS in a manner conducive to both the linguistic and emotional development of students. Moreover, the curriculum should be reconceptualized to incorporate autonomy-supportive structures that provide flexibility in assessment and learning processes. Institutions should mandate to design curricula that offer students a variety of pathways for engaging with learning materials, demonstrating mastery, and receiving feedback. This process might involve creating assessment schemes that align with student interests and promote self-directed learning while simultaneously upholding educational standards.

This study acknowledges several limitations stemming from its conceptualization and methodological design. A primary limitation is the focus on trait-like emotions (i.e., trait hope and trait shame), which neglects the transient state emotions that emerge during specific learning tasks and may more directly influence immediate learner engagement and performance (Li & Dewaele, 2024). Future studies are advised to examine task hope and task shame to effectively capture the dynamicity, situatedness, and specificity of task emotions (Li & Dewaele, 2024). Additionally, this study's exclusive focus on two emotions—hope and shame—does not consider the potential interplay of other discrete emotions, such as fear, anger, pride, or frustration, which may also affect learner motivation. Moreover, this study was conducted in a general L2 learning context, lacking focus on specific L2 skills (e.g., writing, speaking, listening,

and reading), and it is recommended that future research examines the roles of TAS, hope, and shame at the skill-specific level. From a methodological standpoint, the use of self-report measures, although standard in emotion and motivation research, poses a risk of social desirability bias and limits the depth of participants' emotional experiences. Employing mixed-method approaches, such as qualitative interviews or behavioral observations, could complement the quantitative data and offer richer insights. Furthermore, the cross-sectional design restricts the ability to draw causal inferences about the relationships between teacher autonomy support, emotions, and intended effort. Longitudinal or experimental studies are recommended to provide more robust evidence of causal pathways. Finally, the sample population, consisting of Chinese EFL learners, presents a cultural specificity that may limit the generalizability of the findings. Extending this research to diverse cultural contexts is crucial for validating the observed relationships across different language learning environments.

Another promising avenue for future research pertains to the co-constructed nature of shame, with a specific emphasis on explaining the mechanisms through which external responses, notably such as those from teachers following student underperformance, contribute to the manifestation of shame (Teimouri, 2018). An investigation of teachers' tendencies toward experiencing shame and hope, and the consequent implications for their sense of self, motivation, and instructional strategies, could yield novel insights into the influence of emotions within L2 instruction. These interconnected elements merit exploration through advanced research methodologies, including ecological momentary assessment, latent profile analysis, nested ecosystem model, the idiodynamic method, and Q-methodology. Moreover, non-cognitive individual differences (IDs, e.g., hope, shame) merit exploration in parallel with cognitive constructs (e.g., working memory) to produce improved explanations of the interrelations and resultant impact on cognitive processes and behavioral outcomes.

## Conclusions

This study investigated the mediation roles of the achievement emotions of hope and shame in the relationship between TAS and IE among Chinese EFL learners, guided by the CVT (Pekrun, 2006). The results consistently supported the hypotheses that TAS positively predicted IE, underscoring the significance of autonomy-supportive teaching in student motivation. Moreover, TAS was found to positively predict hope and negatively predict shame, indicating that supportive teaching fosters positive emotions and reduces negative ones. Further analysis revealed that hope



positively influenced IE, highlighting its role in enhancing student motivation. Conversely, shame negatively impacted IE, indicating its detrimental effect on student effort. Mediation analysis showed that hope and shame mediated the relationship between TAS and IE. These findings underscore the importance of cultivating hope to enhance motivation and addressing shame to improve student outcomes. Overall, the study contributes to CVT by illustrating how TAS influences achievement emotions, which in turn affect IE. It emphasizes the critical mediating role of emotions in the relationship between educational environments and learning outcomes. Moreover, by focusing on hope and shame, the study offers new insights into these emotions within the EFL context, suggesting that creating a supportive and autonomy-enhancing learning environment can promote positive emotions and mitigate negative ones, thereby fostering increased student motivation and effort.

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## Declarations

**Conflict of interest** No potential conflict of interest was reported by the author(s).

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