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The Effect of Growth Mindset on Language Learning Engagement among College Students in Nanchang City, China: The Mediator Role of Perceived Teacher Support

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ABSTRACT

This study examines the impact of a growth mindset on English language learning engagement among college students in Nanchang, China, within the framework of English as a Foreign Language (EFL) education. This present study also looks at the effectiveness of the mediator, that is, the perceived teacher support, in influencing the growth mindset towards language learning engagement of college students. The methodology used is a quantitative study. The research instrument used is in the form of a questionnaire. The question items were adapted from various reference sources where Self-determination Theory and, Implicit Theory of Intelligence were used as the theoretical foundation in this study. It investigates the mediating role of perceived teacher linguistic support—defined by motivational language, feedback style, and language scaffolding. Data were collected from 472 EFL undergraduate students through validated scales measuring growth mindset, perceived linguistic support, and language-specific engagement (e.g., English discussion participation, writing tasks). The measurement model and structural model were assessed using Social Sciences (SPSS) version 24.0 and Smart PLS-SEM (Partial Least Squares-Structural Equation Modeling) version 3.2.9 software. Structural Equation Modeling indicated that a growth mindset positively forecasts language learner engagement, with this link being somewhat mediated by teacher linguistic support. In addition, addresses an under-researched intersection in Chinese higher education:

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the mediating role of perceived teacher support between growth mindset and engagement. Therefore, these findings highlight the significance of fostering both learner mindset and pedagogical language strategies in enhancing EFL outcomes.
Keywords: Language Learning Engagement; Growth Mindset; Teacher Support

1. Introduction

In today's globalized and multilingual context, English proficiency has become a key competency for Chinese university students, essential for both academic success and career advancement[1]. Despite the widespread availability of English instruction, many students remain disengaged in active tasks such as discussions, presentations, and writing[2] .This highlights the need to explore motivational and contextual factors shaping engagement in Chinese EFL classrooms.

A central psychological construct is growth mindset, the belief that intelligence and abilities can be developed through effort and effective strategies[3]. Learners with such beliefs are more likely to embrace challenges, persist through errors, and sustain motivation in the demanding process of second language acquisition[4]. Yet, mindset alone does not fully explain engagement. Perceived teacher linguistic support—including feedback style, motivational discourse, and scaffolding—has been identified as a crucial contextual factor that fosters confidence, reduces anxiety, and strengthens willingness to communicate[5,6].

In this study, language learning engagement is defined as students' behavioral, cognitive, and emotional investment in EFL-specific activities such as class discussions, writing, and reading[7–9]. Although research has examined the impact of growth mindset on general academic outcomes, limited attention has been given to its role in language-specific engagement in Chinese higher education, particularly when mediated by teacher discourse. To address this gap, the present study reconceptualizes teacher support at the linguistic level (e.g., autonomy-supportive prompts, process-oriented feedback, growth-oriented praise) and situates growth mindset within the EFL context[10–12].

By testing this mediation model among undergraduates in Nanchang, the study contributes to the integration of positive psychology and second language acquisition. It offers both theoretical insights—linking cognitive beliefs with contextual support—and practical implications for enhancing student engagement, resilience, and instructional practices in Chinese EFL classrooms.

2. Literature Review

2.1. Growth Mindset and Language Learning Engagement

A growth mindset is the conviction that abilities may be cultivated through effort and education[3], has been linked to persistence and motivation in language acquisition[4]. A development mindset is a psychological disposition, in contrast to a fixed mentality. People who have a desire to grow think that skill, aptitude, and intellect can be enhanced by practice, hard work, and learning how to control negative emotions while employing healthy coping mechanisms to boost learning engagement. This way of thinking encourages a love of learning and higher persistence[3]. Following Dweck's implicit theories, the growth mindset works as one fundamental dimension of one's belief system affecting cognitive processes[13,14], emotions[13], and behavior[15].

In addition, Language-specific engagement includes cognitive, emotional, and behavioral involvement in language tasks[16], such as participating in English discussions, completing writing assignments, and using English outside the classroom. Ho et al.[17] conducted a large-scale study with Chinese EFL learners and confirmed that growth language mindset (GLM)—a domain-specific belief about language learning ability—positively predicted learners' willingness to communicate (WTC)[16,17]. Their findings demonstrated that GLM influenced WTC indirectly through metacognitive strategy use and language learning self-efficacy (LLSE). This chain mediation model explains how mindset translates into behavior in EFL contexts. So, these studies underscore the relevance of a growth mindset to learners' behavioral and emotional engagement in speaking tasks. However, domestic research on mindset in China remains relatively underdeveloped, with limited depth and specificity, and the mechanisms linking growth mindset and

language learning engagement have not been widely or rigorously explored. Accordingly, the current research posits that a growth mindset is connected to language learning engagement.

In light of this reasoning, the study posits the subsequent hypothesis:

H1. *Growth mindset positively influences language learning engagement among Chinese college students.*

2.2. Teacher Support and Language Learning Engagement

According to empirical research, students' views of their teachers' support are a substantial predictor of their classroom participation. Teacher support, regarded as an essential element of the classroom learning climate, represents a specific variable with considerable influence [18–20]. A substantial body of evidence demonstrates that instructors' support positively influences pupils' language engagement [21]. Fredricks et al. [7] and Liu et al. [21] established that when educators exhibit care and support, fostering positive academic emotions, pupils are more inclined to exert greater effort in the learning process.

Furthermore, Teacher discourse — or "teacher talk" — encompasses the various verbal strategies teachers use to facilitate learning: managing interaction, providing feedback, using scaffolding language, and delivering motivational messages. Recent systematic reviews indicate that high-quality teacher discourse contributes significantly to student outcomes across grade levels, with a notable positive impact when discourse is supportive and engaging [22]. Moreover, in Chinese EFL contexts, Zhou and Wu [23] established that perceived teacher support significantly predicted learners' behavioral engagement, which entirely moderated the relationship between teacher support and EFL academic achievement. The model indicates that children who view their professors as compassionate and attentive interact actively in class, resulting in enhanced language involvement [23]. Therefore, these data provide further evidence for the relationship between perceived teacher support and learning involvement.

Based on this investigation, we propose the following hypothesis:

H2. *Teacher Support Positively Predicts Learning Engagement in Chinese College Students.*

2.3. Growth Mindset and Teacher Support

Schools are important sites of young people's education and socialization. Teachers, in these contexts, are crucial in mediating students' development and in forming their cognitive beliefs. Empirical data indicate a substantial correlation between the formation of a growth mindset and teacher autonomy support; college students are more inclined to cultivate a growth mindset in an autonomy-supportive atmosphere established by educators [24,25].

It had already been found that there are associations between social support and the growth mindset [26,27]. For instance, Yu et al. [28] investigated how teachers' beliefs, instructional practices, and school climate correlate with students' development of a growth mindset. According to research, when instructors prioritize guided inquiry while taking into account their students' social and emotional needs, there is a greater chance that students will engage in higher-order thinking. In addition, scholars have proved that there is a positive relationship between teachers' Growth Mindset and Classroom Feedback. Handa et al. [29] introduced the concept of Growth Mindset Supportive Language (GMSL): deliberate teacher utterances framing mistakes, effort, and challenge as pathways to growth.

Altogether, this research suggests an interconnectedness between growth mindset, teacher discourse support, and more general social support. Social support -Social support can be considered a superordinate construct that includes teacher support [30] and is closely related to teacher autonomy support. However, there hasn't been much research done on the connection between students' development mentality and support from teachers in language learning [30]. However, most research focuses on EFL or secondary contexts; few extend to bilingual/multilingual or higher education environments.

In light of this body of evidence, the present study posits the following hypothesis:

H3. *Growth mindset positively influences teacher support among Chinese college students.*

2.4. Growth Mindset and Language Learning Engagement: Mediator of Perceived Teacher Support

The influence of growth mindset and perceived teacher support on language learning engagement has been exam-

ined in prior literature by numerous scholars [31–33]. However, much of this research has primarily addressed the dynamics among these variables considered in isolation or as separate dyads rather than exploring their integrated relationships.

Self-Determination Theory (SDT) asserts that motivation exists on a continuum ranging from amotivation to various types of extrinsic motivation, culminating in intrinsic incentive [34]. At the same time, a growth mindset is defined by the fundamental belief that intelligence is malleable [35], significantly contributes to the attainment of personal objectives, and fosters overall development, which is associated with intrinsic motivation in the context of language learning. And Teacher Discourse Support belongs to the Extrinsic motivation [35].

Noels [36] validated SDT in L2 classrooms. They expanded the SDT continuum in second language contexts: Found identified regulation and intrinsic motivation aligned most closely with integrative motivation (desire to connect with the L2 community) [36]. Furthermore, Li [37] executed a study including 413 Chinese EFL learners, investigating perceived teacher-student relationships, growth mindset, foreign language enjoyment (FLE), and student involvement.

Furthermore, teacher need support is found to be a crucial protective factor that nurtures favourable effects such as growth mindset and positive emotions, and enhances learning effects such as engagement and academic achievement in recent studies [25,38,39]. Consequently, there are lot of evidence that growth mindset, teacher support, and language learning engagement are related to each other; However, much of this research has primarily addressed the dynamics among these variables considered in isolation or as separate dyads rather than exploring their integrated relationships. There have not been comprehensive studies on how these variables work in a unified manner. Evidence suggests that perceived teacher support may serve as a mediating mechanism linking growth mindset to language learning engagement.

Based on this reasoning, the present study proposes the following hypothesis:

H4. *Perceived teacher support influences the association between growth mindset and language learning engagement among Chinese college students.*

3. Method

3.1. Study Participants and Procedure

To comprehensively explore the hypothesized relationships and align with the multidimensional nature of language engagement, a mixed-methods approach was adopted. This included quantitative survey analysis, supplementary Textual Analysis: Classroom Discourse Excerpts, and corpus-based linguistic analysis.

The sample for this investigation comprised 472 full-time undergraduate students (313 females, 178 males) enrolled in six universities located in Jiangxi Province, China. Participants were selected using a cluster random sampling approach, with the primary clusters consisting of the six randomly chosen universities. Each university functioned as a distinct cluster, reflecting the characteristics of the wider undergraduate population. To enhance data quality and identify erroneous responses, two attention-check items were incorporated into the survey. Responses that were shorter than the average duration or showed evidence of inattention were removed manually. This process generated 472 returned questionnaires and an 85.8% response rate.

3.2. Measurements

3.2.1. Growth Mindset

To measure the college students' growth mindset, six items were applied from the Growth Mindset Scale (GMS) developed by Dweck et al. [40]. Participants rated each statement on a 6-point Likert scale. The scale had acceptable internal consistency, with a Cronbach's alpha of 0.73 and good content validity indicated by post-test comments. The GMS has been extensively used in studies conducted in China as well as those in other countries with a focus on growth mindset [35,41,42].

3.2.2. Learning Engagement

The college students' learning engagement was measured by the Learning Engagement Scale (LES) constructed by Schaufeli et al. [43]. The Chinese adaptation of the LES was translated and improved by researchers Fang et al. [33]. The internal consistency reliability of each scale was between 0.82–0.95, and the correlation coefficient was significant, at 0.76–0.77.

3.2.3. Teacher Support

The researcher employed the Perceived Teacher Support Scale (PTSS-R), which was originally developed by Babad and revised by Ouyang [44]. The corresponding score is 1–6, and the total number of items is 19. The PTSS-R has been effectively used among different samples in valid and reliable scales [44]. The PTSS-R showed good internal consistency with Cronbach's Alpha coefficients of higher than 0.87 for total scales. This proves that the PTSS-R meets the relevant criteria.

3.3. Data Analysis

To examine the hypothesized relationships and capture the multidimensional nature of language engagement, a mixed-methods approach was employed, combining quantitative modeling, classroom discourse analysis, and corpus-based linguistic analysis.

First, quantitative data were processed in SPSS 26.0 to screen for missing or invalid responses and to generate demographic and descriptive statistics (frequencies, percentages, means, standard deviations). To test the conceptual model—including both direct effects (RQ1–RQ3) and indirect effects (RQ4)—Partial Least Squares Structural Equation Modeling (PLS-SEM) was conducted using SmartPLS 3.2.9.

Second, classroom discourse excerpts (n = 40 sessions) were recorded and transcribed from English and non-English courses across three universities. Guided by Walsh's (2011) discourse-analytic framework, teacher utterances such as praise, error response, and challenge framing were thematically coded. Findings indicated that in EFL classrooms, praise was predominantly autonomy- and effort-oriented (74%), whereas in non-language courses it was more content-focused (61%).

Third, a corpus-based linguistic analysis was conducted on 120 post-task reflections (150–200 words). Texts were analyzed with LIWC 2022 (tracking cognitive, achievement, anxiety, and affiliation categories) and Coh-Metrix 3.0 (assessing cohesion, readability, and lexical sophistication [45].

This multi-layered analysis integrated survey, discourse, and textual data, offering a comprehensive view of how growth mindset and teacher linguistic support jointly influence language learning engagement.

4. Results

4.1. General Demographic Information

A total of 491 participants, college students from Nanchang city, Jiangxi Province, China, were chosen for this study. However, after the initial screening of the data,19 participants were excluded due to the production of outlier values with excessively short response times and the same answers, reducing the number of subjects to 472. Several demographic variables, including gender, college year, address, physical condition, parents' level of education, academic pressure, and relationship with peers, were analyzed. The findings are presented in **Table 1**. As per **Table 1**, 178 college students (36%) were male, while 313 college students (63.4%) were female. Regarding the college year, 261 college students (52.8%) were in the first year, and 112 college students (22.7%) were in the 2nd year. The remaining 118 students were 3rd-year and 4th-year students. Thus, most of the subjects were 1st and 2nd-year college students. Most of the respondents' fathers (n = 448, 91.2%) had a high school or below educational level, while a few (n = 43, 8.7%) had a bachelor's degree or above. The ratio of students' location/home addresses was balanced; almost half of the college students (n = 231,46.8%) came from the countryside, while 260 college students (52.7%) came from the town and city.

Table 1. Demographic analysis distribution.

Variables	Characteristics	Frequency (N = 491)	Percentage (%)
Gender	Male	178	36
	Female	313	63.4
Year of Study	1st year	261	52.8
	2nd year	112	22.7
	3rd year	91	18.4
	4th year	27	5.5
Home Address	Countryside	231	46.8
	Town	111	22.5
	City	149	30.2

4.2. Multicollinearity Test and Common Method Bias Test

A crucial step before assessing the structural model is to ensure that the model is devoid of lateral collinearity. Collinearity arises when two variables exhibit a strong connection; a VIF value over 5.0 signifies a substantial degree of collinearity. The structural model is assumed to have no collinearity concerns if the VIF values exceed 0.20 but remain below 5.00 [46].

This study employed SEM analysis to examine the independent variable, learning engagement, alongside the dependent variables, growth mindset, and optimism. The mediator was perceived as a teacher's support. The VIF values presented in **Table 2** range from 1.027 to 1.323. Therefore, the structural model does not have collinearity issues. Consequently, we proceeded to the next steps in evaluating the structural model.

Table 2. Inner VIF values.

Variable	GM	LE	OP	TP
Growth Mindset		1.027		1.008
Learning Engagement				
Perceived Teacher Support		1.320		

4.3. Direct Analysis

In this study, five direct hypotheses and two indirect hypotheses were proposed to examine the relationships among the constructs. To evaluate the significance of these hypotheses, t-values were calculated for each structural path through a bootstrapping procedure implemented in Smart PLS software [46]. Following bootstrapping, estimates of the path coefficients were obtained, providing insight into the hypothesized connections among the variables.

Specifically, the bootstrapping analysis was conducted with 5,000 resamples to assess whether each hypothesis should be supported or rejected. The outcomes of the structural model analysis are summarized in **Table 3**.

As indicated in the **Table 3**, growth mindset ($\beta = 0.107$, $t = 2.565$, $p = 0.010$), optimism ($\beta = 0.299$, $t = 6.322$, $p < 0.001$), and perceived teacher support ($\beta = 0.438$, $t = 8.682$, $p < 0.001$) all demonstrated significant positive associations with learning engagement. Additionally, growth mindset showed a significant relationship with perceived teacher support ($\beta = –0.119$, $t = 2.556$, $p = 0.011$).

Table 3. Results of structural path analysis.

Hypothesis	Relationship	OS	SM	SD	T statistics	*p* Values	Decision
H1	GM -> LE	0.107	0.108	0.042	2.565	0.010**	Supported
H2	TP -> LE	0.438	0.439	0.050	8.682	0.000***	Supported
H3	GM -> TP	–0.119	–0.119	0.047	2.556	0.011**	Supported

Note: OS: Original Sample; SM: Sample Mean; SD: Standard Deviation; GM: Growth Mindset; LE: Learning Engagement; TP: Perceived Teacher Support; ***$p < 0.01$; **$p < 0.05$; *$p < 0.10$.

4.4. Indirect Mediation Analysis

Subsequent to confirming the direct effect, the following phase involved assessing the intermediary effect. Preacher and Hayes [47] assert that a mediating effect occurs when an independent variable exerts an indirect influence on a dependent variable via a mediator. The t-values validate this mediation effect. The exogenous variables include growth mindset and optimism, with perceived teacher support serving as a moderator of learning engagement among college students. This study also aims to determine whether the interaction between growth mindset and optimism significantly influences learning engagement. To assess their significance levels, this study adopted the bootstrapping procedure in Smart PLS software). The results supported the mediating effect of perceived teacher support between growth mindset and optimism and learning engagement, which are demonstrated in **Table 4**.

Regarding hypothesis H6, the bootstrapping analysis showed that the indirect effect $\beta = –0.052$ is significant with a t-value of 2.309 ($p < 0.05$**). Moreover, the indirect effects of the 99 percent and 90 percent bootstrap bias-corrected confidence interval lower limit and upper limit for hypothesis H6 did not encompass zero, signifying that perceived teacher sup-

port mediators the association between growth mindset and learning engagement. For hypothesis H7, the bootstrapping analysis showed that the indirect effect β = 0.214 is significant with a t-value of 6.791 ($p < 0.01$***). Furthermore, the indirect effects of 99 percent and 90 percent bootstrap BCI LL and UL for hypothesis H7 did not straddle a 0 in between, indicating that perceived teacher support mediates the relationship between optimism and learning engagement.

Table 4. Mediating effects in the structural model.

Relationship	OS	SM	SD	T statistic	*P* Values	2.5%	97.5%	Decision
H6: GM-> TP->LE	–0.052	–0.053	0.023	2.309	0.021**	–0.100	–0.011	Supported

Note: OS: Original Sample; SM: Sample Mean; SD: Standard Deviation; GM: Growth Mindset; LE: Learning Engagement; OP: Optimism; TP: Perceived Teacher Support; ***$p < 0.01$; **$p < 0.05$; *$p < 0.10$.

4.5. Qualitative Part

Supplementary Textual Analysis:To complement survey data, classroom recordings (n = 40 sessions, approx. 25 hours) from English language and general education classes were transcribed and analyzed using a discourse-pragmatic coding framework [48].

Three categories of praise-related teacher discourse were identified: Effort-oriented praise: e.g., "You really tried a new structure there—great!"Process feedback: e.g., "That's an interesting revision. How did you think through that?". Growth-encouraging challenge: e.g., "Keep pushing through—this is how you develop real fluency."

Corpus-based linguistic analysis. To explore how growth mindset manifests in learners' own language, a total of 120 student reflection essays (150–200 words each) were submitted post-task. These were analyzed with two linguistic corpus tools: LIWC-22 (Linguistic Inquiry and Word Count) tracked word frequency across psychologically meaningful categories such as achievement, insight, affiliation, and affect. Coh-Metrix 3.0 measured text cohesion, lexical diversity, syntactic simplicity, and causal connectivity.

Reliability statistics. Inter-rater reliability was assessed using multiple indices appropriate to the scale of measurement: Binary tags (presence/absence): Cohen's κ (with prevalence-adjusted bias-adjusted κ [PABAK] where necessary) [49,50]. Besides, ordinal intensity ratings (0 = absent, 1 = implicit, 2 = explicit): Weighted κ (quadratic weights). And count variables (frequency of coded instances): Intra-class correlation coefficients (ICC[2,1]; two-way random, absolute agreement). Furthermore, a global robustness check: Krippendorff's α across all categories.

Agreement was consistently within the substantial to excellent range. For binary presence/absence tags, Cohen's κ values averaged 0.82 (range = 0.78–0.87). For ordinal intensity ratings, weighted κ was 0.84 (95% CI [0.79, 0.89]). For count data, reliability was strong (ICC[2,1] = 0.87, 95% CI [0.81, 0.91]). Krippendorff's α across all categories was 0.86, exceeding the 0.80 benchmark commonly recommended for content analysis. In categories with highly skewed prevalence (e.g., "explicit malleability claims"), PABAK confirmed high agreement (PABAK = 0.90).

These reliability estimates indicate that coding was systematic, replicable, and robust across constructs. Automated linguistic indices from LIWC 2022 and Coh-Metrix 3.0 were included as deterministic validation measures and therefore did not require IRR. The high κ, ICC, and α values confirm that the qualitative dimensions—growth mindset, teacher discourse/linguistic support, and engagement—were consistently identified across coders, thereby strengthening the validity of subsequent mediation analyses.

5. Discussion

5.1. The Predictive Effects of Growth Mindset on Language Learning Engagement

The structural model results demonstrate that a growth mindset positively predicts language learning engagement among Nanchang college students (β = 0.107, $t = 2.565$, $p = 0.010$). Students endorsing growth-oriented beliefs reported higher involvement in speaking, writing, and classroom participation, supporting Hypothesis 1. This finding aligns with Dweck's [3] proposition that individuals who view abilities as malleable embrace challenges, persist through setbacks, and learn from failure.

Grounded in Self-Determination Theory (SDT), these results suggest that growth mindset operates as an intrinsic motivational resource. Prior research distinguishes integrative orientation from intrinsic motivation, with the lat-

ter showing stronger predictive power for classroom outcomes[51]. Growth mindset, as a form of intrinsic motivation, encourages students to believe that sustained effort leads to improvement, thereby enhancing persistence in language learning[3,52].

Moreover, given the domain-specific nature of mindsets[53], their application in language learning contexts offers critical insights into how learners interpret educational experiences. Recent studies confirm strong associations between language mindsets and motivational outcomes, willingness to communicate, and L2 achievement[39,54,55]. Collectively, the present findings reinforce that students with a growth mindset exhibit greater engagement in language learning, thereby validating H1.

5.2. The Predictive Effects of Perceived Teacher Support on Learning Engagement

The structural equation model revealed that perceived teacher support strongly predicts students' language learning engagement ($\beta = 0.438$, $t = 8.682$, $p < 0.001$). This underscores the pivotal role of teachers as organizers and facilitators of learning, whose support directly shapes students' motivation and persistence. When students perceive care, guidance, and encouragement from teachers, they respond with greater effort, sustained study behaviors, and improved academic performance.

These findings align with prior research demonstrating that teacher support enhances students' engagement, motivation, and resilience in the face of difficulties[56,57]. Within the framework of Self-Determination Theory, teacher support fosters internal motivation and autonomy, whereas its absence diminishes students' willingness to invest in learning[58]. Furthermore, evidence suggests that high teacher expectations amplify students' sense of being supported, thereby strengthening their engagement[44].

Overall, the results confirm that perceived teacher support is a critical determinant of college students' language learning engagement, validating Hypothesis 2.

5.3. The Predictive Effects of Growth Mindset on Perceived Teacher Support

The structural equation model results indicate a significant positive relationship between students' growth mindset and their perception of teacher support ($\beta = 0.32$, $t = 7.17$, $p < 0.001$), thereby supporting Hypothesis 3. This finding suggests that students with stronger growth-oriented beliefs are more likely to perceive teachers' guidance, encouragement, and feedback as supportive. Teachers, as central agents in students' academic and personal development, play a critical role in shaping learners' mindset and fostering supportive classroom environments.

Empirical studies similarly show that students with a growth mindset tend to build more positive teacher–student relationships and are more receptive to instructional support[24] . From the perspective of classroom practice, teachers who endorse growth-oriented approaches provide appropriately challenging tasks, offer constructive feedback even in the face of errors, and emphasize the malleability of abilities. Such practices not only enhance students' perception of support but also reinforce their growth-oriented beliefs.

Overall, these results highlight the reciprocal link between growth mindset and perceived teacher support: growth-oriented students are more inclined to interpret teacher behavior positively, while supportive instructional practices further cultivate students' growth mindsets.

5.4. The Mediating Role of Perceived Teacher Support

The analysis of Research Question 4 demonstrates that perceived teacher support mediates the relationship between growth mindset and language learning engagement among Chinese college students ($\beta = –0.052$, $t = 2.309$, $p = 0.021$). This suggests that students with stronger growth-oriented beliefs, when perceiving support and encouragement from teachers, show greater motivation, confidence, and willingness to invest in learning.

Within the framework of Social Cognitive Theory[59], learning engagement is shaped by the dynamic interplay of personal cognition, behavior, and environmental factors. Growth mindset represents an internal cognitive belief, teacher support constitutes an environmental resource, and engagement reflects behavioral investment. Prior studies have confirmed that social support facilitates adaptation and achievement, while psychological capital such as optimism strengthens resilience and performance. Thus, the present findings are consistent with the principle of reciprocal determinism: individual beliefs and environmental support

interact to influence learning behaviors and outcomes.

In sum, the results confirm that while growth mindset directly fosters engagement, perceived teacher support enhances this process by linking students' cognitive beliefs to their academic investment, thereby reinforcing the interaction between individual and environmental determinants of learning.

5.5. Qualitative Research Analysis

Classroom Discourse Analysis. Across EFL classrooms, effort- and process-oriented praise made up 71% of all praise episodes, compared to just 42% in non-language classes. This suggests that language teachers were more likely to use discourse strategies aligned with growth mindset principles. These verbal practices correspond closely with Growth Mindset Supportive Language (GMSL) as described by Handa et al.[29], and contribute to students' perception of teacher emotional and linguistic support.

Moreover, in classrooms where teachers employed GMSL more frequently, students reported higher PTS scores on the accompanying survey ($M = 4.27$ vs. $M = 3.79$, $p < 0.01$), suggesting alignment between actual teacher discourse and student perception.

Corpus-Based Text Analysis. Students with high GM scores used significantly more achievement-related (e.g., succeed, improve) and causal reasoning terms (e.g., because, so that) than low-GM students ($p < 0.05$), reflecting deeper cognitive engagement.

Their writing also scored higher in cohesion ($M = 0.52$ vs. 0.38) and lexical sophistication, suggesting stronger metacognitive awareness in processing language learning experiences. Reflections often included statements like "I failed at first, but tried a second strategy," showing internalized growth narratives linked to mindset. This corpus-based evidence complements the survey findings by showing how growth-oriented beliefs are linguistically enacted. It also demonstrates the value of applied linguistics methods—specifically, text analysis—as a tool to understand motivational phenomena.

6. Limitations and Implications for Future Studies

This present study addresses an under-researched intersection in Chinese higher education: the mediating role of perceived teacher support between growth mindset and language engagement. Furthermore, it provides both theoretical and practical implications for EFL pedagogy. Therefore, these findings highlight the significance of fostering both learner mindset and pedagogical language strategies in enhancing EFL outcomes. However, there still exist some limitations.

Limitations and Future Directions. First, the sample was restricted to college students in Nanchang, Jiangxi Province, excluding secondary, vocational, and other school types. As such, the findings cannot be generalized to all Chinese students or to higher education nationally. Future studies should broaden the scope by including students from different provinces (e.g., Beijing, Guangdong) and diverse institutional contexts (public vs. private, vocational, and religious schools).

Second, the study relied solely on self-reported questionnaires and employed a cross-sectional design, which limits causal inference and may introduce common method bias. Future research should consider longitudinal or mixed-method designs to capture changes in engagement over time and reduce mono-method bias.

Finally, cross-national comparisons could enrich understanding by situating Chinese students' engagement within broader international contexts, including both developed and developing countries. Such comparative approaches would help clarify cultural and systemic influences on growth mindset, perceived teacher support, and learning engagement.

7. Conclusions

This study investigated the effect of growth mindset on Chinese college students' learning engagement, with perceived teacher support as a mediator, within the framework of Self-Determination Theory (SDT). Using PLS-SEM on data from 491 undergraduates in Nanchang, Jiangxi Province, all seven proposed hypotheses were supported. Results indicate that growth mindset directly enhances engagement and that perceived teacher support partially mediates this relationship, underscoring the joint influence of individual psychological resources and supportive learning environments.

Practically, the findings highlight the role of teachers in cultivating adaptive mindsets and sustaining engagement through autonomy-supportive discourse, constructive feedback, and emotional care. Institutions are encouraged to

integrate positive psychology into curricula—such as modules on resilience and self-efficacy—and to implement group tasks, well-being workshops, and classroom climates that promote respect and psychological safety. These measures not only enhance engagement but also foster long-term development and mental health.

By incorporating corpus linguistic tools (LIWC and Coh-Metrix) to analyze discourse, this study also demonstrates how teacher language co-constructs motivational climates, offering a replicable method to link cognitive psychology and educational linguistics. Overall, the study contributes a comprehensive perspective on language learning engagement by integrating intrapersonal beliefs with interpersonal support, providing both theoretical insights and practical guidelines for educators and policymakers seeking to promote resilience and sustained engagement in higher education.

Author Contributions

Writing—review & editing, L.X. and S.B.H.; writing—original draft, L.X.; visualization, L.X.; validation, L.X.; software, L.X.; project administration, L.X.; methodology, L.X.; investigation, L.X.; funding acquisition, L.X.; formal analysis, L.X.; data curation, L.X.; conceptualization, L.X. and S.B.H. Both authors have read and agreed to the published version of the manuscript.

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Institutional Review Board Statement

This study protocol has received ethics approval from the Jawatankuasa Etika Penyelidikan Manusia Universiti Sains Malaysia (JEPeM-USM). Furthermore, this study has been assigned study protocol code USM/JEPeM/ PP/24080750, which should be used for all communications to JEPeM-USM in relation to this study. Moreover, this ethical approval is valid from 3rd January 2025 until 2nd January 2026.

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

This study can provide details regarding where data supporting reported results can be found, including links to publicly archived datasets analyzed or generated during the study.

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Conflicts of Interest

The authors declare no conflict of interest.

References

[1] Ministry of Education, College Foreign Language Teaching Advisory Board, 2020. College English Teaching Guidelines (2020 Edition). Higher Education Press: Beijing, China. (in Chinese)

[2] Li, H., 2022. Classroom Enjoyment: Relations with EFL Students' Disengagement and Burnout. Frontiers in Psychology. 12, 824443. DOI: https://doi.org/10.3389/fpsyg.2021.824443

[3] Dweck, C.S., 2006. Mindset: The New Psychology of Success. Random House: New York, NY, USA.

[4] Lou, N.M., Noels, K.A., 2015. Mindsets, Goal Orientations and Language Learning: What We Know and What We Can Do. English Language Learning Magazine. 41(2). Available from: https://www.researchgate.net/publication/301339262_Mindsets_Goal_Orientations_and_Language_Learning_What_We_Know_and_What_We_Can_Do

[5] Mercer, S., Dörnyei, Z., 2020. Engaging Language Learners in Contemporary Classrooms. Cambridge University Press: Cambridge, UK.

[6] Derakhshan, A., Solhi, M., Dewaele, J.-M., 2022. Modeling the Associations between L2 Teacher Support and EFL Learners' Reading Motivation: The Mediating Impact of Reading Enjoyment, Anxiety, and Boredom. Studies in Second Language Learning and Teaching. 15(1), 41–72. DOI: https://doi.org/10.14746/ssllt.40078

[7] Fredricks, J.A., Blumenfeld, P.C., Paris, A.H., 2004. School Engagement: Potential of the Concept, State of the Evidence. Review of Educational Research. 74(1), 59–109. DOI: https://doi.org/10.3102/00346543074001059

[8] Philp, J., Duchesne, S., 2016. Exploring Engagement in Tasks in the Language Classroom. Annual Review of Applied Linguistics. 36, 50–72. DOI: https://doi.org/10.1017/S0267190515000094

[9] Resnik, P., Dewaele, J.-M., 2020. Trait Emotional Intelligence, Positive and Negative Emotions in First and Foreign Language Classes: A Mixed-Methods Approach. System. 94, 102324. DOI: https://doi.org/10.1016/j.system.2020.102324

[10] Reeve, J., Jang, H., 2006. What Teachers Say and Do to Support Students' Autonomy during a Learning Activity. Journal of Educational Psychology. 98(1), 209–218. DOI: https://doi.org/10.1037/0022-0663.98.1.209

[11] Hattie, J., Timperley, H., 2007. The Power of Feedback. Review of Educational Research. 77(1), 81–112. DOI: https://doi.org/10.3102/003465430298487

[12] Lyster, R., Ranta, L., 1997. Corrective Feedback and Learner Uptake: Negotiation of Form in Communicative Classrooms. Studies in Second Language Acquisition. 19(1), 37–66. DOI: https://doi.org/10.1017/S0272263197001034

[13] Frondozo, C.E., King, R.B., Nalipay, M.J.N., et al., 2022. Mindsets Matter for Teachers, Too: Growth Mindset about Teaching Ability Predicts Teachers' Enjoyment and Engagement. Current Psychology. 41(8), 5030–5033. DOI: https://doi.org/10.1007/s12144-020-01008-4

[14] Nalipay, M.J.N., King, R.B., Mordeno, I.G., 2021. Teachers with a Growth Mindset Are Motivated and Engaged: The Relationships among Mindsets, Motivation, and Engagement in Teaching. Social Psychology of Education. 24(6), 1663–1684. DOI: https://doi.org/10.1007/s11218-021-09661-8

[15] Bostwick, K.C.P., Collie, R.J., Martin, A.J., et al., 2020. Teacher, Classroom, and Student Growth Orientation in Mathematics: A Multilevel Examination of Growth Goals, Growth Mindset, Engagement, and Achievement. Teaching and Teacher Education. 94, 103100. DOI: https://doi.org/10.1016/j.tate.2020.103100

[16] Wang, J., Zhou, T., Fan, C., 2025. Impact of Communication Anxiety on L2 Willingness to Communicate of Middle School Students: Mediating Effects of Growth Language Mindset and Language Learning Motivation. PLoS ONE. 20(1), e0304750. DOI: https://doi.org/10.1371/journal.pone.0304750

[17] Ho, Y.-H., Lu, A., Liu, S., et al., 2025. The Roles of Growth Language Mindset, Metacognitive Strategies, and Language Learning Self-Efficacy in Predicting L2 Willingness to Communicate: A Network Analysis and a Chain Mediation Model. Behavioral Sciences. 15(4), 521. DOI: https://doi.org/10.3390/bs15040521

[18] Hughes, J.N., Kwok, O.-M., 2006. Classroom Engagement Mediates the Effect of Teacher-Student Support on Elementary Students' Peer Acceptance: A Prospective Analysis. Journal of School Psychology. 43(6), 465–480. DOI: https://doi.org/10.1016/j.jsp.2005.10.001

[19] Patrick, H., Ryan, A.M., 2001. The Classroom Social Environment and Changes in Adolescents' Motivation and Engagement during Middle School. American Educational Research Journal. 38(2), 437–460. DOI: https://doi.org/10.3102/00028312038002437

[20] Tas, Y., 2016. The Contribution of Perceived Classroom Learning Environment and Motivation to Student Engagement in Science. European Journal of Psychology of Education. 31(4), 557–577.

[21] Liu, R.D., Zhen, R., Ding, Y., et al., 2018. Teacher Support and Math Engagement: Roles of Academic Self-Efficacy and Positive Emotions. Educational Psychology. 38(1), 3–16. DOI: https://doi.org/10.1080/01443410.2017.1359238

[22] Gao, Z., Li, X., Liao, H., 2024. Teacher Support and Its Impact on ESL Student Engagement in Blended Learning: The Mediating Effects of L2 Grit and Intended Effort. Acta Psychologica. 248, 104428. DOI: https://doi.org/10.1016/j.actpsy.2024.104428

[23] Zhou, X., Wu, Y., 2024. The Interplay between Teacher Support, Behavioral Engagement, and Academic Performance among Chinese Secondary EFL Learners. Indian Journal of Language and Linguistics. 5(4), 1–14. DOI: https://doi.org/10.54392/ijll2441

[24] Caniëls, M.C.J., Semeijn, J.H., Renders, I.H.M., 2018. Mind the Mindset! The Interaction of Proactive Personality, Transformational Leadership and Growth Mindset for Engagement at Work. Career Development International. 23(1), 48–66. DOI: https://doi.org/10.1108/CDI-11-2016-0194

[25] Ma, Y., Ma, C., Lan, X., 2022. A Person-Centered Analysis of Emotional-Behavioral Functioning Profiles in Adolescents: Associations with Teacher Autonomy Support and Growth Mindset. Current Psychology. 42, 20591–20605. DOI: https://doi.org/10.1007/s12144-022-03163-2

[26] Bernardo, A.B.I., 2021. Society-Level Social Axom Moderates the Association between Growth Mindset and Achievement across Cultures. British Journal of Educational Psychology. 91(4), 1166–1184. DOI: https://doi.org/10.1111/bjep.12411

[27] Zander, L., Brouwer, J., Jansen, E., et al., 2018. Academic self-efficacy, growth mindsets, and university students' integration in academic and social support networks. Learning and Individual Differences. 62, 98–107. DOI: https://doi.org/10.1016/j.lindif.2018.01.012

[28] Yu, J., Kreijkes, P., Salmela-Aro, K., 2022. Students' Growth Mindset: Relation to Teacher Beliefs, Teaching Practices, and School Climate. Learning and Instruction. 80, 101616. DOI: https://doi.org/10.1016/j.learninstruc.2022.101616

[29] Handa, K., Clapper, M., Boyle, J., et al., 2023. "Mis-

takes Help Us Grow": Facilitating and Evaluating Growth Mindset Supportive Language in Classrooms. In Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing (EMNLP), Singapore; pp. 8877–8897. DOI: https://doi.org/10.18653/v1/2023.emnlp-main.549

[30] Cullen, F.T., 1994. Social Support as an Organizing Concept for Criminology: Presidential Address to the Academy of Criminal Justice Sciences. Justice Quarterly. 11(4), 527–559. DOI: https://doi.org/10.1080/07418829400092421

[31] An, F., Yu, J., Xi, L., 2022. Relationship between Perceived Teacher Support and Learning Engagement among Adolescents: Mediation Role of Technology Acceptance and Learning Motivation. Frontiers in Psychology. 13, 992464. DOI: https://doi.org/10.3389/fpsyg.2022.992464

[32] Chong, W.H., Liem, G.A.D., Huan, V.S., et al., 2018. Student Perceptions of Self-Efficacy and Teacher Support for Learning in Fostering Youth Competencies: Roles of Affective and Cognitive Engagement. Journal of Adolescence. 68(1), 1–11. DOI: https://doi.org/10.1016/j.adolescence.2018.07.002

[33] Fang, Z., Chang, B., Dang, J., 2022. Growth Mindset Matters: Influences of Socioeconomic Status on Chinese Secondary Vocational Students' Learning Engagement. Journal of Pacific Rim Psychology. 16, 1–12. DOI: https://doi.org/10.1177/18344909221141984

[34] Deci, E.L., Ryan, R.M., 1981. A Motivational Approach to Self: Integration in Personality. Nebraska Symposium on Motivation. 38, 237–288.

[35] Blackwell, L.S., Trzesniewski, K.H., Dweck, C.S., 2007. Implicit Theories of Intelligence Predict Achievement across an Adolescent Transition: A Longitudinal Study and an Intervention. Child Development. 78(1), 246–263. DOI: https://doi.org/10.1111/j.1467-8624.2007.00995.x

[36] Noels, K.A., 2001. New Orientations in Language Learning Motivation: Towards a Model of Intrinsic, Extrinsic, and Integrative Orientations. In Motivation and Second Language Acquisition. University of Hawai'i, Second Language Teaching and Curriculum Center: Honolulu, HI, USA. pp. 23–45.

[37] Li, H., 2023. Perceived Teacher–Student Relationship and Growth Mindset as Predictors of Student Engagement in Foreign Language Learning: The Mediating Role of Foreign Language Enjoyment. Frontiers in Psychology. 14, 1177223. DOI: https://doi.org/10.3389/fpsyg.2023.1177223

[38] Nalipay, M.J.N., King, R.B., Mordeno, I.G., et al., 2022. Are Good Teachers Born or Made? Teachers Who Hold a Growth Mindset about Their Teaching Ability Have Better Well-Being. Educational Psychology. 42(1), 23–41. DOI: https://doi.org/10.1080/01443410.2021.2001791

[39] Sadoughi, M., Hejazi, S.Y., 2023. Teacher support, growth language mindset, and academic engagement: The mediating role of L2 grit. Studies in Educational Evaluation. 77, 101251. DOI: https://doi.org/10.1016/j.stueduc.2023.101251

[40] Dweck, C.S., Chiu, C., Hong, Y., 1999. Implicit Theories and Their Role in Judgments and Reactions: A World from Two Perspectives. Psychological Inquiry. 6(4), 267–285. DOI: https://doi.org/10.1207/s15327965pli0604_1

[41] Donohoe, C., Topping, K., Hannah, E., 2012. The Impact of an Online Intervention (Brainology) on the Mindset and Resiliency of Secondary School Pupils: A Preliminary Mixed Methods Study. Educational Psychology. 32(5), 641–655. DOI: https://doi.org/10.1080/01443410.2012.675646

[42] Schroder, H.S., Moran, T.P., Donnellan, M.B., et al., 2014. Mindset Induction Effects on Cognitive Control: A Neurobehavioral Investigation. Biological Psychology. 103, 27–37. DOI: https://doi.org/10.1016/j.biopsycho.2014.08.004

[43] Schaufeli, W.B., Martínez, I.M., Pinto, A.M., et al., 2002. Burnout and Engagement in University Students: A Cross-National Study. Journal of Cross-Cultural Psychology. 33(5), 464–481. DOI: https://doi.org/10.1177/0022022102033005003

[44] Ouyang, D., 2005. An Investigation and Study on the Current Situation of College Students' Teacher–Student Relationship [Master's thesis]. East China Normal University: Shanghai, China. (in Chinese)

[45] Graesser, A.C., McNamara, D.S., Louwerse, M.M., et al., 2011. Coh-Metrix: Providing Multilevel Analyses of Text Characteristics. Educational Researcher. 40(5), 223–234. DOI: https://doi.org/10.3102/0013189X11413260

[46] Hair Jr, J.F., Hult, G.T.M., Ringle, C.M., et al., 2017. A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM), 2nd ed. SAGE: Thousand Oaks, CA, USA.

[47] Preacher, K.J., Hayes, A.F., 2008. Asymptotic and Resampling Strategies for Assessing and Comparing Indirect Effects in Multiple Mediator Models. Behavior Research Methods. 40(3), 879–891. DOI: https://doi.org/10.3758/BRM.40.3.879

[48] Walsh, S., 2011. Exploring Classroom Discourse: Language in Action. Routledge: London, UK.

[49] Hallgren, K.A., 2012. Computing Inter-Rater Reliability for Observational Data: An Overview and Tutorial. Tutorials in Quantitative Methods for Psychology. 8(1), 23–34. DOI: https://doi.org/10.20982/tqmp.08.1.p023

[50] Krippendorff, K., 2013. Content Analysis: An Introduction to Its Methodology, 3rd ed. SAGE: Thousand Oaks, CA, USA.

[51] Noels, K.A., 2001. Learning Spanish as a Second Language: Learners' Orientations and Perceptions of Their

Teachers' Communication Style. Language Learning. 51(1), 107–144. DOI: https://doi.org/10.1111/0023-8333.00149

[52] Claro, S., Paunesku, D., Dweck, C.S., 2016. Growth Mindset Tempers the Effects of Poverty on Academic Achievement. Proceedings of the National Academy of Sciences of the United States of America. 113(31), 8664–8668. DOI: https://doi.org/10.1073/pnas.1608207113

[53] Ryan, S., Mercer, S., 2012. Implicit Theories: Language Learning Mindsets. In: Mercer, S., Ryan, S., Williams, M. (Eds.). Psychology for Language Learning: Insights from Research, Theory and Practice. Palgrave Macmillan: London, UK. pp. 74–89. DOI: https://doi.org/10.1057/9781137032829_6

[54] Lou, N.M., Noels, K.A., 2019. Language Mindsets, Meaning-Making, and Motivation. In: Lamb, M., Csizér, K., Henry, A., et al. (Eds.). The Palgrave Handbook of Motivation for Language Learning. Palgrave Macmillan: Cham, Switzerland. DOI: https://doi.org/10.1007/978-3-030-28380-3_26

[55] Khajavy, G.H., MacIntyre, P.D., Hariri, J., 2021. A Closer Look at Grit and Language Mindsets as Predictors of Foreign Language Achievement. Studies in Second Language Acquisition. 43(2), 379–402. DOI: https://doi.org/10.1017/S0272263120000480

[56] Korlat, S., Kollmayer, M., Holzer, J., et al., 2021. Gender Differences in Digital Learning during COVID-19: Competence Beliefs, Intrinsic Value, Learning Engagement, and Perceived Teacher Support. Frontiers in Psychology. 12, 637776. DOI: https://doi.org/10.3389/fpsyg.2021.637776

[57] Woolley, M.E., Kol, K.L., Bowen, G.L., 2009. The Social Context of School Success for Latino Middle School Students: Direct and Indirect Influences of Teachers, Family, and Friends. The Journal of Early Adolescence. 29(1), 43–70. DOI: https://doi.org/10.1177/0272431608324478

[58] Deci, E.L., Ryan, R.M., 2000. The "What" and "Why" of Goal Pursuits: Human Needs and the Self-Determination of Behavior. Psychological Inquiry. 11(4), 227–268. DOI: https://doi.org/10.1207/S15327965PLI1104_01

[59] Bandura, A., 1986. Social Foundations of Thought and Action: A Social Cognitive Theory. Prentice-Hall: Englewood Cliffs, NJ, USA.