



THE IMPACT OF GOAL SETTING ON ENGLISH LEARNING PERFORMANCE: THE MEDIATING ROLE OF LEARNING ENGAGEMENT

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Abstract

Goal setting (GS) is regarded as a key component of the forethought phase of self-regulation. Given that self-regulation has been widely recognised as an important contributor to academic outcomes, the present study sought to further explore how GS influences English learning performance (ELP), with learning engagement (LE) considered as a mediating factor in the context of English as a Second Language (ESL). 295 English major students from a college in China were invited to complete three instruments: the Goal Setting Scale, the School Engagement Measure, and the English Self-ratings Measure, which measure students' GS, LE, and ELP, respectively. The descriptive and correlation analysis was done, and the mediation model was tested. The results showed: (1) The GS, LE and ELP of the ESL Chinese college students were all at a relatively moderate level; (2) GS, LE, and ELP were significantly interconnected; (3) LE served as a partial mediator between GS and ELP, indicating that students' goal-setting behaviors contribute to better English learning by fostering greater engagement. Chinese ESL students and English teachers are suggested to place emphasis on both setting goals and engagement for students' English study.

Keywords: goal setting, learning engagement, English learning performance, mediation model, ESL students

Introduction

In the English as a Second Language (ESL) context, persistent motivational difficulties and classroom environment challenges among Chinese students highlight the need to strengthen goal setting (GS) and learning engagement (LE) in English learning. English is one of the main second languages studied by Chinese students at all academic stages including primary school, secondary school, and university (Cheng & Zhao, 2016). In second language acquisition, psychological factors play a pivotal role that can influence ESL students' language ability (Haidara, 2016). On the one side, many students lack intrinsic motivation (Zhang & Shao, 2021), and their intrinsic learning motivation is not as strong as extrinsic learning motivation (Peng & Fu, 2021). College students are less motivated in their English course since they lack the sense of success, interests in English course and the ability of controlling over their English coursework (Li et al., 2016). In China, the scores are unilaterally emphasized because of the exam-oriented education system, and it distorts students' learning motivation (Meng et al., 2021). On the other side, class size is a major concern in China. Large class size may prevent students from becoming more interactive in class (Malik et al., 2017). Large class learning environment negatively impacted students' engagement owing to the scarcity of attention and feedback from teachers (Chan & Smith, 2024). To foster students' motivation, improve students' focus on learning, and enhance their learning outcomes, it is necessary to pay attention to improving students' GS and LE.

Within the framework of self-regulated learning and student engagement, both GS and LE are recognised as critical determinants of students' language learning outcomes. In accordance with Zimmerman and Moylan's cyclical model of self-regulated learning (Zimmerman & Moylan, 2009), GS, as one important factor of the forethought stage of self-regulation, can be a predictor of students' learning performance (Li et al., 2021; Sides & Cuevas, 2020), and it is an inseparable part of ESL learning (Cheng, 2023). Meanwhile, in language study, meaningful learning could be unlikely without engagement (Hiver et al., 2020). As Fredricks et al. (2004) suggested, there are three types of engagement: behavioural, emotional, and cognitive, all of which have a positive correlation with students' learning achievement (Lei et al., 2018).

GS as a method to improve academic performance has been widely explored. For example, based on a survey on 328 American students, Dotson (2016) has affirmed the important role of GS and proposed that setting goals helps students keep focused on desired learning outcomes. Over the past few years, the impact of GS on engagement has been explored in different educational settings such as Australia (Burns et al., 2019; Martin et al., 2022) and Japan (He & Loewen, 2022; Li et al., 2021). In addition, the mediating function of LE in learning performance has also been studied among students from different regions, such as students in Pakistan (Qureshi et al., 2023) and students in China (Wang & Zhang, 2020). However, relatively few studies have explored the manner in which LE functions as a mediator between GS and English learning performance (ELP) in Chinese higher education. Given this, it is worth exploring how GS and LE collectively impact college students' ELP. Therefore, this study sought to explore the pathway through which GS impacts ELP, considering LE as a mediator, in a sample of 295 Chinese college students in an ESL context with the following hypotheses: (1) There is a significant correlation among GS, LE, and ELP within Chinese college students in ESL learning; (2) LE is the significant mediator in the relationship between GS and ELP within Chinese college students in ESL learning.

Literature Review

The Predictive Impact of GS on ELP

GS serves as a key component and the initial stage of effective self-regulated learning. Goals can be understood as the aims or objectives of actions that help individuals attain anticipated outcomes (Locke & Latham, 2002). The self-regulated learning cycle starts with GS and tactical planning (Panadero & Alonso Tapia, 2014; Zimmerman & Moylan, 2009). More specifically, for self-regulated writing, setting goals entails identifying rhetorical and content targets and planning how to achieve them (Graham et al., 2017). Goals can be characterized by their content, which include clarity and specificity, and by their intensity, which may be gauged through elements such as cognitive scope, effort level, and goal significance (Locke et al., 1981). For ESL learners, goals should be both motivating and achievable, implying that their level of difficulty must be appropriate for learners to realistically reach the desired outcomes (Zhu et al., 2023).

Building on the basic understanding of goal-setting principles, it is essential to explore how GS directly impacts students' academic performance. GS has been proven to affect students' performance (Alhadabi & Karpinski, 2020; Chung et al., 2021; Zimmerman et al., 1992; Zimmerman & Moylan, 2009). In detail, goals influence performance in four aspects. First, goals guide individuals to pay attention to the goal-related activities; second, goals serve as motivation for individuals to make greater effort; third, goals affect individuals' persistence; fourth, goals influence actions indirectly by arousing task-relevant knowledge and strategies (Locke & Latham, 2002). GS is related to English proficiency among ESL college students in English classes. According to Azatova's (2021) experiment on six ESL students,

GS can significantly enhance students' ELP, and the significance of GS in developing self-regulation should be emphasized. Morisano et al. (2010) have found that in university, students who completed the goal-setting intervention showed significant progress in their academic performance. Specifically, GS has promotive effects on ESL students' writing ability (Pham, 2023). What's more, it has been proven that combining GS with reading strategy instruction leads to greater improvements in ESL learners' reading performance than traditional instructional methods (Shih & Reynolds, 2018). Therefore, Abe et al. (2014) recommend that goal-setting practices should be incorporated as an approach to support students' academic achievement, with notable benefits for English learning.

Mixed evidence suggests that the impact of GS on learning outcomes requires further exploration. Drawing on the above-mentioned discussion, GS influences learning performance (Alhadabi & Karpinski, 2020; Chung et al., 2021; Morisano et al., 2010; Zimmerman & Moylan, 2009). However, there is also research suggesting that GS shows no meaningful association with students' learning performance (Hematian et al., 2017). The impact of GS on students' learning performance hence needs to be further studied, and the way GS impacts ESL college students' ELP is still unclear. As a result, it needs further exploration and evidence to explore the pathways through which GS impacts ESL students' ELP. As supported by Iacobucci (2008), a mediator can help conceptualize the unknown process of the predictor variable affecting the outcome variable, implying the potential presence of a mediator during the process.

The Predictive Impact of GS on LE

GS is strongly related to increased student engagement in learning. Studies have reported that setting achievement goals can positively impact students' LE (Collie et al., 2016; Daumiller et al., 2021; Miller et al., 2021), and in an essay assignment, students may begin their engagement by setting goals (Lichtinger & Kaplan, 2011). First, when setting goals, students are more able to find strategies to achieve goals and direct their attention as well as effort toward goal-relevant activities (Antonio & Tuffley, 2015), which is related to their behavioural engagement. Second, setting a clear goal can also increase university students' enthusiasm (Morisano et al., 2010), which is one part of emotional engagement (Sagayadevan & Jeyaraj, 2012). Third, results also indicated that goal-setting intervention encourages students to engage more actively in classroom activities (Buzza & Dol, 2015; Rowe et al., 2017). College students who possess an achievement-oriented mindset are more inclined to engage in academic activities (Miller et al., 2021). Finally, students who pursue mastery-oriented goals tend to show stronger intrinsic motivation and demonstrate deeper cognitive engagement at the university level (Guenther & Miller, 2011).

The Predictive Impact of LE on ELP

ELP is affected by students' LE. According to Fredricks et al. (2004), engagement can be categorized into behavioural, emotional, and cognitive engagement, which is a widely accepted theory at present. As Schaufeli et al. (2002) proposed, LE can be understood as a constructive and satisfying psychological state associated with the knowledge acquisition process. Researchers acknowledged that engagement, being an extensible state of students, can be shaped by the school, and it is an important predictor of students' learning, performance, and graduation (Skinner & Pitzer, 2012). Liu and Feng (2023) emphasized that effective corrective feedback from instructors, which assists ESL students in improving their learning, actually relies on active learner engagement. University students who are more engaged in their studies tend to earn better academic performance, such as satisfactory ELP (Li et al., 2022; Mohamed Mohamed Bayoumy & Alsayed, 2021). Besides, Qureshi et al. (2023) proposed that learning

performance could be enhanced under the joint impact of collaboration and engagement by group discussions and incorporating social factors. A similar conclusion has been reached by studies conducted in different countries or regions. For example, it is suggested that LE had a significant and positive influence on academic performance among medical students in a university in China (Wu et al., 2020). What's more, research on Canadian undergraduates shows that those with elevated LE often perform better on evaluations (Orji & Vassileva, 2020).

The Potential Mediating Role of LE in the Relationship between GS and ELP

LE can be a predictor of ELP, while GS is a potential contributing factor to students' LE. Derived from the Process Model of Perceived Control and School Performance proposed by Skinner et al. (1990), engagement can affect students' academic performance. First, students with high behavioural engagement tend to restrain themselves from disruptive and inattentive behaviours and then get better performance in their studies (Fredricks et al., 2004); second, emotional engagement contributes substantially to the academic success of undergraduate learners (Sagayadevan & Jeyaraj, 2012); third, a gradual shift in cognitive engagement levels, moving from passive to active, then to constructive and interactive engagement, is linked to enhanced academic performance (Chi & Wylie, 2014), and cognitive engagement should be emphasized in ESL learning (Yuan, 2020).

Furthermore, previous studies have tested and confirmed the mediating function of LE in the link between psychological factors and learning performance (Carmona-Halty et al., 2021; Chen, 2017; Jelas et al., 2016; Kim et al., 2019; Luo et al., 2023). For example, in Chen's (2017) study, LE was identified as the key mechanism linking computer self-efficacy to learning outcomes, demonstrating a full mediation effect. In addition, students' digital readiness influenced their academic achievements in the university context through academic engagement (Kim et al., 2019).

Therefore, setting LE as a mediator is justifiable and supported. By designating GS as the predictor and ELP as the outcome variable, the present study proposed that LE may help clarify the link between the two. Thus, LE was examined as a mediator in the relationship between GS and ELP among Chinese ESL college students.

The Present Study

Taken together, GS has been widely recognised as a key component in ESL learning, and past studies have highlighted that clear and attainable goals can enhance learners' academic achievement. However, there are inconsistent findings regarding the link between GS and learning performance, with some studies suggesting strong positive impacts and others reporting no significant impact. Furthermore, while previous studies have explored the direct impact of GS on learning performance and the mediating role of LE across different educational settings, empirical research exploring LE as a mediator between GS and ELP remains limited, particularly in the Chinese ESL context. Consequently, the underlying process linking motivational goal-setting practices and English learning outcomes is still not fully understood.

Therefore, this study aimed to fill this gap by exploring the impacting mechanism of GS on ELP by taking LE as a mediator. The purpose of this study was to elucidate the goal-oriented learning process and help English major students be aware of concrete strategies for enhancing their English learning outcomes. The researcher specifically sought to explore how GS is related to students' ELP and how LE mediates this process.

Research Methodology

General Background

This study employed a quantitative research approach to explore the mediating mechanisms underlying Chinese college students' ELP. Specifically, a cross-sectional survey design was adopted, as it provides a means to assess structural relationships among multiple latent variables within a specific population at a given point in time, and is widely used in behavioural and educational research to test hypothesized structural relationships rather than to establish causality (Creswell & Creswell, 2017). Guided by Zimmerman and Moylan's cyclical model of self-regulated learning and Fredricks et al.'s (2004) theory of student engagement, the main constructs examined included GS as a predictor variable, LE as a mediator, and ELP as the outcome variable. The research was conducted among English-major undergraduates from a college in China, providing insights into ESL learning within the Chinese higher education context; focusing on a single site also allowed for greater control over contextual variables and ensured data consistency, thereby enhancing the internal validity of the findings.

Sample Selection

The Neusoft Institute Guangdong, a college in China, is a dynamic college that focuses on teaching and cultivating undergraduate students. Given that the undergraduate population at this college largely mirrors that of ordinary Chinese universities, it was chosen as the focus for this research. The participants consisted of 295 English major students from the target institution. According to Cohen's (2013) power analysis guidelines, a sample of 295 participants was adequate for regression-based mediation analysis with a statistical power of .80 and ensured reliable estimation of model parameters. The participants anonymously and voluntarily completed the questionnaires online. The students ranged from first-year students to final-year students, most aged 18 to 23. All of them are Chinese students, which means that all of them learn English as a second language, and they are ESL students.

Instruments and Procedures

GS: goal setting scale

The GS was measured with the Goal Setting Scale of the Regulation of Learning Questionnaire (RLQ; McCardle & Hadwin, 2015). The RLQ, which was developed for university students, includes five dimensions: task understanding, goal setting and planning, monitoring, evaluating, and adapting. As the current study specifically focused on GS, the Goal Setting Scale, which is a 7-point Likert scale with 9 items (e.g., "Set goals that would be useful for checking on my own progress as I studied"), was chosen from the RLQ. The Goal Setting Scale was translated into Chinese to ensure its comprehensibility for Chinese students. The Cronbach's alpha coefficient of the translated Goal Setting Scale of this study is .94, indicating a high reliability. Meanwhile, the model fit in the confirmatory factor analysis of this scale is good, which means an acceptable construct validity ($df = 3.532$; RMR = 0.058; GFI = 0.955; AGFI = 0.887; NFI = 0.972; TLI = 0.960; CFI = 0.980; RMSEA = 0.093).

LE: school engagement measure

LE was assessed by School Engagement Measure (SEM; Fredricks et al., 2005). The SEM was proposed by Fredricks et al. in 2005, which contains three sub-constructs: behavioural

engagement, emotional engagement, and cognitive engagement. There are totally 19 items of SEM: 5 items for behavioural engagement (e.g. “I follow the rules at school”); 6 items for emotional engagement (e.g. “I feel excited by my work at school”); 8 items for cognitive engagement (e.g. “I read extra books to learn more about things we do in school”), which were evaluated using a 5-point Likert scale ranging from “never” to “all of the time”. Students were required to fill out the questionnaire in the context of English learning. The reliability and validity of SEM, tested by Fredricks et al. (2005), were good. The SEM was translated into Chinese to ensure its comprehensibility for Chinese students. Cronbach’s alpha coefficient of the translated SEM of this study is .901, which is at a highly acceptable level. At the same time, the SEM shows an acceptable construct validity ($\chi^2/df = 2.882$; RMR = 0.068; GFI = 0.882; AGFI = 0.834; NFI = 0.875; TLI = 0.891; CFI = 0.910; RMSEA = 0.080).

ELP: self-assessment measure

To measure students’ ELP, a four-item Self-assessment Measure was used in this study. It is suggested that biased self-assessment occurs below awareness (Karpen, 2018). There are two components of self-assessment: comparative bias and the calibration effect, which may jointly result in the individuals’ overestimation and underestimation of their ability (Kim et al., 2016). Karpen (2018) also believed that individuals may misestimate their abilities in self-assessment, and this misestimate is often an overestimation, while males tend to overestimate their ability more frequently (Andrade, 2019).

However, despite its limitations, self-assessment is still a significant and feasible method to measure individuals’ ability. Bandura (1993) emphasized the importance of perceived self-efficacy, which is conceptualized as the judgment of one’s ability to realize a targeted level of performance (Bandura, 1986), in cognitive development. Therefore, it is a reasonable and important way to allow individuals to assess their own level of performance. What’s more, the internal consistency of self-assessments is proved to be predominantly high (Ross, 2019; Ross et al., 2002; Ross et al., 1999). For instance, Ross et al. (1999) had grade 4-6 students rate their performance in English writing. The Cronbach’s alpha coefficient was .84, indicating a high internal consistency of the self-assessment measures of their study. In addition, the validity of self-assessment measures has been tested, indicating that the measure is an acceptable way to assess ELP (Duru & Poyrazli, 2011; Lowinger et al., 2016). As the 2014 Standards for Educational and Psychological Testing requires, test or assessment users should ensure the validity or reliability of the test or assessment (Bukhari, 2020). Hence, to get reliable results, before students took the self-assessment, researchers introduced the purpose of this study and the use of the assessment results and explained that the results would be kept confidential. By doing so, students could better understand the assessment to finish the self-assessment faithfully without any concern.

Self-assessment measures are remarkably suitable in higher education, given that observational assessment methods are impractical (Roth et al., 2016). It is believed that when objective ratings are not available, self-assessments are an effective and valid way to assess students’ English proficiency (Zhang et al., 2020). The self-assessment has been commonly used to measure students’ ELP by many scholars (Jensen et al., 2011; Lowinger et al., 2016; Martirosyan et al., 2015; Zhang et al., 2020).

In this study, a 5-point Likert scale was employed to evaluate students’ English proficiency in the skills of listening, speaking, reading, and writing. The Cronbach’s alpha coefficient of the Chinese version of English Self-ratings Measure of this study is .826. The Self-rating Measure displays a high construct validity in confirmatory factor analysis ($\chi^2/df = 0.471$; RMR = 0.003; GFI = 0.999; AGFI = 0.992; NFI = 0.999; TLI = 1.007; CFI = 1; RMSEA = 0.000).

There are the steps of the process of data collection: first, the teacher informed the students in advance about the relevant matters of this survey and solicited voluntary participants from 20 October 2023 to 1 November 2023; second, after completing the recruitment, with the verbal consent of all voluntary participants and the officer of the college, the teacher signed an informed consent form on behalf of those participants and the officer; third, the purpose of the study was explained to the participants and their teacher; fourth, after getting ethics approval from the UTM Research Ethic Committee of University of Technology Malaysia (Universiti Teknologi Malaysia) (Approval No.: UTMREC-2024-47) on 18 February 2024, participants were invited to finish the questionnaires online by the link sent by their teacher; finally, the data were collected and analysed.

Data Analysis

SPSS 26.0 was applied to conduct descriptive and correlation analyses, while mediation analysis was carried out using PROCESS v4.2 by Andrew F. Hayes. The specific steps are as follows.

First, to describe the central tendency and the dispersion degree of the collected data, the values of mean and standard deviation were calculated (Hinton et al., 2014). At the same time, to explore the correlation between GS, LE, and ELP, the Pearson correlations were calculated. Second, to explore the mediating role of LE in the relationship between GS and ELP, the values of three variables were standardized, and the mediation analysis was done. The bootstrapping technique was used to further examine the mediating effect: the hypothesis of indirect effect is accepted as significant if 0 lies outside the CI (Preacher et al., 2007).

Research Results

Given that the data in this study were obtained through self-report instruments, potential common method bias was considered. The items were standardized before conducting factor analysis since they were measured on different scales. The Kaiser-Meyer-Olkin (KMO) value is .92, higher than .60, and Bartlett's test of sphericity is significant ($\chi^2 = 6423.14, p < .0001$), indicating the suitability of the data for factor analysis (Shrestha, 2021). Therefore, Harman's single-factor test was conducted before proceeding with data analysis (as shown in Table 1). Multiple factors were extracted, and the first factor explained 38.18% of the total variance, remaining under the accepted 40% limit (Podsakoff et al., 2003; Tehseen et al., 2017). This suggests that common method bias is unlikely to have meaningfully affected the outcomes of this study.

Table 1
Harman's Single-Factor Test Result (Excerpt)

Component	Eigenvalue	Variance Explained (%)	Cumulative Variance (%)
1	12.22	38.18	38.18
2	3.07	9.60	47.77
3	2.30	7.18	54.96
4	1.68	5.24	60.20
5	1.26	3.95	64.15
6	1.20	3.75	67.90

Descriptive results and correlation analysis among study variables are displayed in Table 2. The mean of participants' scores of GS is 44.53 (with respect to the possible full score = 63), which meant participants generally exhibited a moderate degree of GS; meanwhile, the mean of participants' scores of LE is 62.01 (with respect to the possible full score = 95), which indicated a relatively moderate level of participants' engagement in school. For ELP, the mean of participants' scores is 12.66 (with respect to the possible full score = 20), indicating that participants' ELP could be characterized as moderate rather than high. In a word, the descriptive results implied that the GS, LE, and ELP of the ESL Chinese college students were all at a middle level.

In addition, as shown in Table 2, the Pearson correlation coefficient of GS and LE is .59, and a significant correlation was observed at the .01 level. Similarly, the Pearson correlation coefficient of GS and ELP is .44; there was also a significant correlation at the .01 level. Similarly, a significant correlation at the .01 level existed between LE and ELP with the Pearson correlation coefficient of .60. Therefore, the correlation results in Table 2 showed that there was a significant correlation among GS, LE, and ELP among the ESL Chinese college students.

Table 2
Descriptive Results and Correlations Analysis of Study Variables

Variables	M	SD	1	2	3
1. GS	44.52	9.57	1		
2. LE	62.01	10.51	.59**	1	
3. ELP	12.66	2.27	.44**	.60 **	1

Note: **. Correlation is significant at the .01 level (2-tailed).

Table 3 presents the results of regression analysis among the variables in the mediation model. Model 1 estimated the impact of GS on LE, and the regression coefficient of this model is $\beta = .59$ ($p < .001$), which indicated that GS had a positive and significant influence on LE. In Model 2, the predictors were GS and LE, and the outcome variable was ELP. In this model, the regression coefficient of GS on ELP is $\beta = .14$ ($p < .05$), while the regression coefficient of LE on ELP is $\beta = .52$ ($p < .001$). It meant that both GS and LE were significant predictors of ELP in Model 2. Model 3 also indicated a positive and significant impact of GS on ELP with the regression coefficient $\beta = .44$ ($p < .001$). According to the regression results, GS positively predicted LE and ELP, while LE also exhibited a positive association with ELP.

Table 3
Regression Analysis among Study Variables in the Mediation Model

	Outcome Variable	Predictor	R ²	F	β	t
Model1	LE	GS	.35	156.01	.59***	12.49
Model 2	ELP	GS	.37	85.54	.14***	2.37
		LE			.52***	9.00
Model 3	ELP	GS	.19	70.82	.44***	8.42

Note: ***. Correlation is significant at the .001 level.

After regression analysis, the total, direct and indirect effects of GS on ELP in the mediation model were calculated (see Table 4). Specifically, the indirect effect was calculated by the Bootstrap method. The total effect is .44; the direct effect is .11; and the indirect effect is .31. Since the mediated effect = total effect – direct effect (Jose, 2013), the indirect effect in the model is the mediating effect. Therefore, the mediated effect = .31, BootSE = 0.06, 95%, BootCI = [0.18, 0.43]. On the one hand, the percentage of mediating (indirect) effect is 69.15%, and 0 lies outside the confidence interval. According to Preacher et al. (2007), the hypothesis of the mediating effect of this study was accepted as significant with the percentage of 69.15% because 0 lay outside the Bootstrap confidence interval. This finding showed that LE mediated 69.15% of the total effect of GS on ELP, signifying its crucial role in linking goal-setting behaviours to English learning outcomes.

On the other hand, the Cohen's d of the mediation model of this study is (Cohen, 2013). This value of 0.29, which is between 0.15 and 0.35, reflected a medium-to-large effect size (Cohen, 2013), suggesting that LE served as a substantial mediator between GS and ELP. In short, both the percentage of indirect effect (69.15%) and the Cohen's (0.29) highlighted the key mediating role of LE between GS and ELP. The mediation model, which clearly illustrated the relationship between variables, is shown in Figures 1 and 2.

Table 4
Total, Direct, and Indirect Effects of GS on ELP

Effect	Effect	SE	BootSE	95% CI		Percentage of Indirect Effect (%)
				Lower	Upper	
Total Effect	.44	.05		.34	.54	
Direct Effect	.14	.06		.02	.25	
Indirect Effect	.31		.06	.18	.43	69.15

Figure 1
The Total Effect of GS on ELP

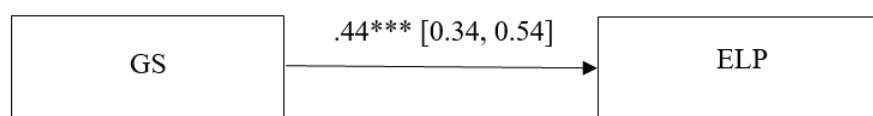
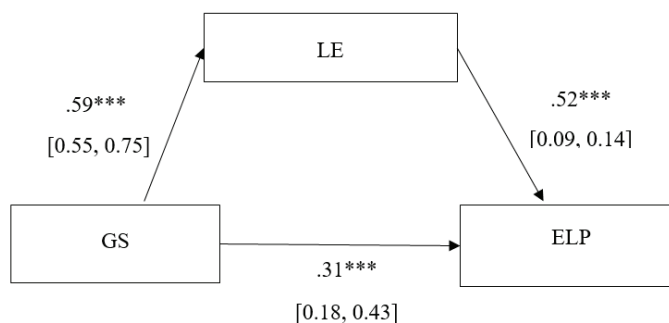


Figure 2
The Mediation Model of GS on ELP



Collinearity, defined as the correlation among two or more predictors, should be addressed in linear regression models. The existence of collinearity can result in some serious problems, such as the unstable estimates of regression coefficients and the dubious validation of the model (Imdadullah et al., 2016). Therefore, to make the result of the regression model convincing, it's necessary to detect whether there is collinearity in the model. In a linear regression model, the variance inflation factor (VIF) functions as a conventional diagnostic tool for identifying correlations between two or more predictor variables, also known as collinearity (Imdadullah et al., 2016; Salmerón Gómez et al., 2016), and the value of VIF higher than 5 to 10 implies the presence of collinearity (Kim, 2019; Shrestha, 2020). As Table 5 shows, both the value of VIF of GS and LE are 1.532, indicating that there was no significant collinearity in the regression model of this study.

Table 5
Collinearity Diagnostics

Coefficients ^a								
Model <i>B</i>		Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>	Collinearity Statistics	
		<i>SE</i>	β			Tolerance	VIF	
1	(Constant)	4.293	.650		6.606	.0001		
	GS	.032	.014	.136	2.367	.019	.653	1.532
	LE	.112	.012	.518	8.996	.0001	.653	1.532

a. Dependent Variable: ELP

Discussion

Chinese College Students' GS, LE, and ELP

According to the descriptive results, the study variables, including GS, LE, and ELP, were found to be at a moderate level among the Chinese ESL college students. Supported by previous studies, more than half of the Chinese students surveyed only occasionally set their goals (Zhao & Pu, 2018). In addition, this outcome echoes previous evidence that Chinese undergraduates generally demonstrate limited emotional and cognitive engagement in their English studies (Gong & Zhang, 2023).

Two reasons may explain the issue of the unsatisfactory level of GS and LE of ESL Chinese college students: the exam-oriented education system in China and individual factors such as self-efficacy and motivation. In exam-oriented education, scores are overly emphasized, which may reduce students' learning enthusiasm. For example, when students are learning oral English, what they are required to do is dealing with exams and get good grades, not learning for communicative purposes (Meng et al., 2021). This may cause a result that students cannot intrinsically engage in learning and set clear learning goals for themselves. In addition, students' self-efficacy may affect their goal-setting behaviours in autonomous English learning (Li & Park, 2021). As mentioned before, many Chinese students lack intrinsic motivation in English learning (Zhang & Shao, 2021), and a lack of motivation may be one of the important reasons resulting in an unsatisfactory level of students' engagement (Gan et al., 2023). As a result, overall ELP, which is related to GS and engagement, is also at a moderate level. This result reflects that Chinese students need to improve their psychological investment in their English learning.

The Predictive Effect of GS and LE on ELP

As noted earlier, psychological variables play a pivotal role in determining English learning outcomes of ESL students (Abrar et al., 2018). Some positive psychological factors like motivation and enjoyment can significantly enhance ESL students' willingness to learn English (Wang, 2023), while some negative psychological factors like fear of making mistakes would hamper their ELP, especially oral performance (Bourezzane, 2016). In this study, when students lack the ability to set goals, they may not have interest and passion for English learning. As a result, they get unsatisfactory English learning outcomes.

The present study also suggests that there is a significant correlation among GS, LE, and ELP in the context of ESL: GS is a significant predictor of LE and ELP, and LE can positively influence ELP. The results of this research coincide with previous evidence suggesting that GS exerts a significant influence on students' LE (Burns et al., 2019; Daumiller et al., 2021; Miller et al., 2021; Rowe et al., 2017) and GS affects task performance (Alhadabi & Karpinski, 2020; Chung et al., 2021; Locke et al., 1981; Lunenburg, 2011; Zimmerman & Moylan, 2009; Zimmerman et al., 1992), and LE can predict learning performance (Carini et al., 2006; Fredricks et al., 2004; Orji & Vassileva, 2020).

Given the significance of GS and LE in ESL learning, some strategies could be taken to improve Chinese ESL college students' goal-setting skills and engagement. For improving students' goal-setting skills, their own intrinsic motivation and teachers' instruction can be effective. The importance of teachers' instruction has been demonstrated (Hill & Chin, 2018). For instance, a student may not be able to set and meet the goals without explicit instruction by the teacher (Chung et al., 2021). Therefore, teachers can teach goal-setting skills explicitly by conducting classroom activities that require students to set short-term and long-term goals for their English learning to help them cultivate the skills of setting goals. Intrinsic motivation is the other essential factor to trigger students to set goals (Fishbach & Woolley, 2022). Educators should consider how to improve students' intrinsic motivation as well. For improving students' engagement, teachers can utilize digital learning environments and their functionalities in higher education. For example, allowing students to ask the lecturer written questions during a lesson by posting messages with their devices may help students overcome their anxiety about asking questions in public and foster their engagement in the lesson (Hutain & Michinov, 2022).

The Mediating Role of LE in the Relationship between GS and ELP

The result of this study shows a percentage of indirect effect of 69.15%. A high percentage of 69.15% means that LE plays a crucial role in explaining how GS influences ELP. It suggests that LE is a major pathway through which GS affects ELP. Prior research has likewise supported the mediating effect of LE (Chen, 2017; Qureshi et al., 2023; Wu et al., 2020). As stated in goal-setting theory (Locke & Latham, 2015), goals improve individuals' performance by motivating their engagement; goals motivate people to engage in task-related activities and exert effort; goals activate the knowledge and skills relevant to the task, and people can get a better performance with this knowledge and skills.

This finding highlights the significance of focusing not just on setting goals but also on fostering student engagement as a pivotal step in ESL education, and it also underscores the necessity of incorporating engagement-focused strategies into English teaching practices in China. For policymakers, it emphasizes the need to prioritize engagement in curriculum framework designs and resource allocation. For educators, this means designing activities in class that arouse students' interest and sustain their motivation. Ultimately, underscoring engagement can lead to improved student learning outcomes by fostering their sustained effort in ESL learning. This evidence underscores the significance of integrating cognitive, emotional, and behavioural dimensions when aiming to enhance learning effectiveness.

Limitation and Future Direction

Despite the contributions of this study, it also has its limitations. First, the number of research samples is relatively small, though it fulfilled the PROCESS requirement to provide valid results. The results will be more reliable with more participants. Second, a more comprehensive understanding of the GS, LE, and ELP of Chinese ESL college students would be obtained if the researcher can explore the ESL students from different level universities in China. Third, it is more plausible to further study by considering students' performance through test achievement rather than self-ratings. Finally, this study solely discussed the individual factors of Chinese ESL students that influence their ELP. In fact, external elements, including instructional methods and the learning environment, also play an important role in shaping students' English learning outcomes. Therefore, to thoroughly explore the methods of improving Chinese students' English learning outcomes, more research needs to be invested in the study of external teaching factors in the future.

Conclusions and Implications

The present study explored the impact mechanism of GS on ELP by taking LE as a mediator. There are three findings of the present study. First, the GS, LE, and ELP of the ESL Chinese college students were all at a relatively moderate level. Second, given that there are few studies in this field specifically focusing on ESL college students, this study further confirmed the impact of GS and LE on Chinese ESL college students' ELP. As one key factor in the forethought phase of self-regulation, GS is a pivotal factor that contributes to greater LE and improved English proficiency among ESL learners. Third, this study clarified how GS affects ELP, showing that LE acts as a mediator in this relationship. This study provided meaningful implications for future research on the GS and LE of ESL students.

Grounded in the findings of this study, there are some suggestions for Chinese ESL students and English teachers. Chinese ESL students and English teachers need to pay attention to setting goals as well as engagement for students' English study. Goals can be a motivation that motivates students to engage in their learning energetically when engagement can directly lead students to successful learning outcomes. English teachers can try to give students some goal-setting instructions in class to help them cultivate a sense of goals. Furthermore, the involvement of teachers is key to fostering student engagement, and offering suitable guidance and care is necessary to achieve this.

Ethics Approval

Ethics approval in the research study that underpins this publication, including the procedures performed in studies, instruments, and methodology used, was provided by the UTM Research Ethics Committee of the University of Technology Malaysia (Universiti Teknologi Malaysia) (Approval No.: UTMREC-2024-47).

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Availability of data and material

The datasets generated during and/or analysed during the current study are available from the authors on reasonable request.

Declaration of Interest

The authors declare no competing interest.

References

- Abe, I. I., Ilogu, G. C., & Madueke, I. L. (2014). Effects of goal-setting skills on students' academic performance in English language in Enugu Nigeria. *Journal of New Approaches in Educational Research*, 3(2), 93–99. <https://doi.org/10.7821/naer.3.2.93-99>
- Abrar, M., Mukminin, A., Habibi, A., Asyraf, F., & Marzulina, L. (2018). "If our English isn't a language, what is it?" Indonesian EFL student teachers' challenges speaking English. *The Qualitative Report*, 23(1), 129–145. <https://doi.org/10.46743/2160-3715/2018.3013>
- Alhadabi, A., & Karpinski, A. C. (2020). Grit, self-efficacy, achievement orientation goals, and academic performance in university students. *International Journal of Adolescence and Youth*, 25(1), 519–535. <https://doi.org/10.1080/02673843.2019.1679202>
- Andrade, H. L. (2019). A critical review of research on student self-assessment. *Frontiers in Education*, 4, 87. <https://doi.org/10.3389/educ.2019.00087>
- Antonio, A., & Tuffley, D. (2015). First year university student engagement using digital curation and career goal setting. *Research in Learning Technology*, 23, Article 28337. <https://doi.org/10.3402/rlt.v23.28337>
- Azatova, S. (2021). I control my own English learning: Developing self-regulation in elementary ell using self-assessment and explicit strategy instruction. *Teflin Journal*, 32(2), 183–213. <https://doi.org/10.15639/teflinjournal.v32i2/183-213>
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs.
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist*, 28(2), 117–148. https://doi.org/10.1207/s15326985ep2802_3
- Bourezzane, N. (2016). *Some psychological factors that hinder students' participation in learner-centered EFL oral classroom activities. Case study: First year LMD students of English*. Mohamed Kheider University of Birska.
- Bukhari, N. (2020). Comparisons of and concerns about two testing application chapters in the 2014 standards for educational and psychological testing. *Universal Journal of Educational Research*, 8(10), 4603–4609. <https://doi.org/10.13189/ujer.2020.081028>
- Burns, E. C., Martin, A. J., & Collie, R. J. (2019). Understanding the role of personal best (PB) goal setting in students' declining engagement: A latent growth model. *Journal of Educational Psychology*, 111(4), 557–572. <https://doi.org/10.1037/edu0000291>
- Buzza, D. C., & Dol, M. (2015). Goal-setting support, motivation, and engagement in alternative math classes. *Exceptionality Education International*, 25(1), 35–66. <https://doi.org/10.5206/eei.v25i1.7716>
- Carini, R. M., Kuh, G. D., & Klein, S. P. (2006). Student engagement and student learning: Testing the linkages. *Research in Higher Education*, 47(1), 1–32. <https://doi.org/10.1007/s11162-005-8150-9>
- Carmona-Halty, M., Salanova, M., Llorens, S., & Schaufeli, W. B. (2021). Linking positive emotions and academic performance: The mediated role of academic psychological capital and academic engagement. *Current Psychology*, 40(6), 2938–2947. <https://doi.org/10.1007/s12144-019-00227-8>
- Chan, S. T. K., & Smith, G. D. (2024). Strategies for enhancing Chinese students' engagement in a large class learning environment: An interpretative phenomenological approach. *Nurse Education in Practice*, 78, Article 104023. <https://doi.org/10.1016/j.nepr.2024.104023>

- Chen, I. S. (2017). Computer self-efficacy, learning performance, and the mediating role of learning engagement. *Computers in Human Behavior*, 72, 362–370. <https://doi.org/10.1016/j.chb.2017.02.059>
- Cheng, X. (2023). Looking through goal theories in language learning: A review on goal setting and achievement goal theory. *Frontiers in Psychology*, 13, Article 1035223. <https://doi.org/10.3389/fpsyg.2022.1035223>
- Cheng, X., & Zhao, S. (2016). On students' key competency in English as a foreign language. *Curriculum, Teaching Material and Method*, 36(5), 79–86. <https://doi.org/10.19877/j.cnki.kcjcjf.2016.05.012>
- Chi, M. T., & Wylie, R. (2014). The ICAP framework: Linking cognitive engagement to active learning outcomes. *Educational Psychologist*, 49(4), 219–243. <https://doi.org/10.1080/00461520.2014.965823>
- Chung, H. Q., Chen, V., & Olson, C. B. (2021). The impact of self-assessment, planning and goal setting, and reflection before and after revision on student self-efficacy and writing performance. *Reading and Writing*, 34, 1885–1913. <https://doi.org/10.1007/s11145-021-10186-x>
- Cohen, J. (2013). *Statistical power analysis for the behavioral sciences* (2nd ed.). Routledge. <https://doi.org/10.4324/9780203771587>
- Collie, R. J., Martin, A. J., Papworth, B., & Ginns, P. (2016). Students' interpersonal relationships, personal best (PB) goals, and academic engagement. *Learning and Individual Differences*, 45, 65–76. <https://doi.org/10.1016/j.lindif.2015.12.002>
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage Publications.
- Daumiller, M., Rinas, R., Olden, D., & Dresel, M. (2021). Academics' motivations in professional training courses: Effects on learning engagement and learning gains. *International Journal for Academic Development*, 26(1), Article 723. <https://doi.org/10.1080/1360144X.2020.1768396>
- Dotson, R. (2016). Goal setting to increase student academic performance. *Journal of School Administration Research and Development*, 1(1), 45–46. <https://doi.org/10.32674/jsard.v1i1.1908>
- Duru, E., & Poyrazli, S. (2011). Perceived discrimination, social connectedness, and other predictors of adjustment difficulties among Turkish international students. *International Journal of Psychology*, 46(6), 446–454. <https://doi.org/10.1080/00207594.2011.585158>
- Fishbach, A., & Woolley, K. (2022). The structure of intrinsic motivation. *Annual Review of Organizational Psychology and Organizational Behavior*, 9(1), 339–363. <https://doi.org/10.1146/annurev-orgpsych-012420-091122>
- 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. <https://doi.org/10.3102/00346543074001059>
- Fredricks, J. A., Blumenfeld, P., Friedel, J., Paris, A., Moore, K., & Lippman, L. (2005). School engagement: What do children need to flourish. *The Search Institute Series on Developmentally Attentive Community and Society*, 3, 305–321. https://doi.org/10.1007/0-387-23823-9_19
- Gan, Z., Liu, F., & Nang, H. (2023). The role of self-efficacy, task value, and intrinsic and extrinsic motivations in students' feedback engagement in English learning. *Behavioral Sciences*, 13(5), 428. <https://doi.org/10.3390/bs13050428>
- Gong, X., & Zhang, J. Q. (2023) A study on the current situation and influencing factors of student learning engagement under the hybrid college English teaching model. *Journal of Higher Education*, S2, 124–127. <https://doi.org/10.19980/j.CN23-1593/G4.2023.S2.031>
- Graham, S., Harris, K. R., MacArthur, C., & Santangelo, T. (2017). Self-regulation and writing. In Schunk, D. H., Greene, J. A., & Schunk, D. H. (Eds.), *Handbook of self-regulation of learning and performance* (2nd ed., pp. 138–152). Routledge. <https://doi.org/10.4324/9781315697048>
- Guenther, C. L., & Miller, R. L. (2011). Factors that promote student engagement. *Promoting Student Engagement*, 1, 10–17.
- Haidara, Y. (2016). Psychological factor affecting English speaking performance for the English learners in Indonesia. *Universal Journal of Educational Research*, 4(7), 1501–1505. <https://doi.org/10.13189/ujer.2016.040701>
- He, X. S., & Loewen, S. (2022). Stimulating learner engagement in app-based L2 vocabulary self-study: Goals and feedback for effective L2 pedagogy. *System*, 105, Article 102719. <https://doi.org/10.1016/j.system.2021.102719>

- Hematian, F., Rezaei, A. M., & Mohammadyfar, M. A. (2017). On the effect of goal setting on self-directed learning, achievement motivation, and academic achievement among students. *Modern Applied Science*, 11(1), 37–47. <http://dx.doi.org/10.5539/mas.v11n1p37>
- Hill, H. C., & Chin, M. (2018). Connections between teachers' knowledge of students, instruction, and achievement outcomes. *American Educational Research Journal*, 55(5), 1076–1112. <https://doi.org/10.3102/0002831218769614>
- Hinton, P. R., McMurray, I., & Brownlow, C. (2014). *SPSS explained*. Routledge. <https://doi.org/10.4324/9781315797298>
- Hiver, P., Al-Hoorie, A. H., & Mercer, S. (Eds.). (2020). *Student engagement in the language classroom* (Vol. 11). Multilingual Matters.
- Hutain, J., & Michinov, N. (2022). Improving student engagement during in-person classes by using functionalities of a digital learning environment. *Computers & Education*, 183, Article 104496. <https://doi.org/10.1016/j.compedu.2022.104496>
- Iacobucci, D. (2008). *Mediation analysis* (No. 156). Sage.
- Imdadullah, M., Aslam, M., & Altaf, S. (2016). Mctest: An R package for detection of collinearity among regressors. *The R Journal*, 8(2), Article 495. <https://doi.org/10.32614/rj-2016-062>
- Jelas, Z. M., Azman, N., Zulnaidi, H., & Ahmad, N. A. (2016). Learning support and academic achievement among Malaysian adolescents: The mediating role of student engagement. *Learning Environments Research*, 19, 221–240. <https://doi.org/10.1007/s10984-015-9202-5>
- Jensen, C., Denver, L., Mees, I. & Werther, C. (2011). Students' and teachers' self-assessment of English language proficiency in English-medium higher education in Denmark: A questionnaire study. In B. Preisler, I. Klitgård & A. Fabricius (Eds.), *Language and learning in the international university: From English uniformity to diversity and hybridity* (pp. 19–38). Multilingual Matters. <https://doi.org/10.21832/9781847694157-005>
- Jose, P. E. (2013). *Doing statistical mediation and moderation*. Guilford Press.
- Karpen, S. C. (2018). The social psychology of biased self-assessment. *American Journal of Pharmaceutical Education*, 82(5), Article 6299. <https://doi.org/10.5688/ajpe6299>
- Kim, H. J., Hong, A. J., & Song, H. D. (2019). The roles of academic engagement and digital readiness in students' achievements in university e-learning environments. *International Journal of Educational Technology in Higher Education*, 16(1), 1–18. <https://doi.org/10.1186/s41239-019-0152-3>
- Kim, J. H. (2019). Multicollinearity and misleading statistical results. *Korean Journal of Anesthesiology*, 72(6), 558–569. <https://doi.org/10.4097/kja.19087>
- Kim, Y. H., Kwon, H., Lee, J., & Chiu, C. Y. (2016). Why do people overestimate or underestimate their abilities? A cross-culturally valid model of cognitive and motivational processes in self-assessment biases. *Journal of Cross-Cultural Psychology*, 47(9), 1201–1216. <https://doi.org/10.1177/0022022116661243>
- Lei, H., Cui, Y., & Zhou, W. (2018). Relationships between student engagement and academic achievement: A meta-analysis. *Social Behavior and Personality: An International Journal*, 46(3), 517–528. <https://doi.org/10.2224/sbp.7054>
- Li, H., Majumdar, R., Chen, M. R. A., & Ogata, H. (2021). Goal-oriented active learning (GOAL) system to promote reading engagement, self-directed learning behavior, and motivation in extensive reading. *Computers & Education*, 171, Article 104239. <https://doi.org/10.1016/j.compedu.2021.104239>
- Li, J., King, R. B., & Wang, C. (2022). Profiles of motivation and engagement in foreign language learning: Associations with emotional factors, academic achievement, and demographic features. *System*, 108, 102820. <https://doi.org/10.1016/j.system.2022.102820>
- Li, K., Johnsen, J., & Canelas, D. A. (2021). Persistence, performance, and goal setting in massive open online courses. *British Journal of Educational Technology*, 52(3), 1215–1229. <https://doi.org/10.1111/bjet.13068>
- Li, M., Yu, L., Qin, Y., Lu, P., & Zhang, X. (2016). College student academic motivation and engagement in the college English course. *Theory and Practice in Language Studies*, 6(9), Article 1767. <http://dx.doi.org/10.17507/tpls.0609.07>
- Li, N., & Park, H. (2021). Relative contribution of self-efficacy and motivation to Chinese learners' autonomous English learning. *Journal of Pan-Pacific Association of Applied Linguistics*, 25(1), 91–114. <https://doi.org/10.25256/PAAL.25.1.5>

- Lichtinger, E., & Kaplan, A. (2011). Purpose of engagement in academic self-regulation. *Self-Regulated Learning: New Directions for Teaching and Learning*, Number 126, 128, Article 445. <https://doi.org/10.1002/tl.440>
- Liu, H., & Feng, M. (2023). The role of learner engagement with corrective feedback in EFL/ESL classrooms. *Frontiers in Psychology*, 14, Article 1118467. <https://doi.org/10.3389/fpsyg.2023.1118467>
- Locke, E. A., & Latham, G. P. (2002). Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. *American Psychologist*, 57(9), 705–711. <https://doi.org/10.1037/0003-066X.57.9.705>
- Locke, E. A., Shaw, K. N., Saari, L. M., & Latham, G. P. (1981). Goal setting and task performance: 1969–1980. *Psychological Bulletin*, 90(1), 125–152. <https://doi.org/10.1037/0033-2909.90.1.125>
- Locke, E., & Latham, G. (2015). Goal-setting theory. In Miner, J.B.(Ed.), *Organizational behavior 1* (pp. 159–183). Routledge. <https://doi.org/10.4324/9781315702018>
- Lowinger, R. J., Kuo, B. C., Song, H. A., Mahadevan, L., Kim, E., Liao, K. Y. H., ... & Han, S. (2016). Predictors of academic procrastination in Asian international college students. *Journal of Student Affairs Research and Practice*, 53(1), 90–104. <https://doi.org/10.1080/19496591.2016.1110036>
- Lunenburg, F. C. (2011). Goal-setting theory of motivation. *International Journal of Management, Business, and Administration*, 15(1), 1–6.
- Luo, Q., Chen, L., Yu, D., & Zhang, K. (2023). The mediating role of learning engagement between self-efficacy and academic achievement among Chinese college students. *Psychology Research and Behavior Management*, 16, 1533–1543. <https://doi.org/10.2147/PRBM.S401145>
- Malik, M. A., Sang, G., & Li, Q. (2017). Chinese university students' lack of oral involvements in the classroom: Identifying and breaking the barriers. *Journal of Research & Reflections in Education (JRRE)*, 11(2), 162–177.
- Martin, A. J., Burns, E. C., Collie, R. J., Bostwick, K. C., Flesken, A., & McCarthy, I. (2022). Growth goal setting in high school: A large-scale study of perceived instructional support, personal background attributes, and engagement outcomes. *Journal of Educational Psychology*, 114(4), 752–771. <https://doi.org/10.1037/edu0000682>
- Martirosyan, N. M., Hwang, E., & Wanjohi, R. (2015). Impact of English proficiency on academic performance of international students. *Journal of International Students*, 5(1), 60–71.
- McCardle, L., & Hadwin, A. F. (2015). Using multiple, contextualized data sources to measure learners' perceptions of their self-regulated learning. *Metacognition and Learning*, 10(1), 43–75. <https://doi.org/10.1007/s11409-014-9132-0>
- Meng, H., Tang, M., & Wu, M. (2021). Current situation on exam-oriented education in China and the outlook for quality-oriented education. In *2021 3rd International Conference on Literature, Art and Human Development (ICLAHD 2021)* (pp. 325–331). Atlantis Press. <https://doi.org/10.2991/assehr.k.211120.060>
- Miller, A. L., Fassett, K. T., & Palmer, D. L. (2021). Achievement goal orientation: A predictor of student engagement in higher education. *Motivation and Emotion*, 45(3), 327–344. <https://doi.org/10.1007/s11031-021-09881-7>
- Mohamed Mohamed Bayoumy, H., & Alsayed, S. (2021). Investigating relationship of perceived learning engagement, motivation, and academic performance among nursing students: A multisite study. *Advances in Medical Education and Practice*, 12, 351–369. <https://doi.org/10.2147/AMEP.S272745>
- Morisano, D., Hirsh, J. B., Peterson, J. B., Pihl, R. O., & Shore, B. M. (2010). Setting, elaborating, and reflecting on personal goals improves academic performance. *Journal of Applied Psychology*, 95(2), 255–264. <https://doi.org/10.1037/a0018478>
- Orji, F., & Vassileva, J. (2020, September). Using machine learning to explore the relation between student engagement and student performance. In *2020 24th International Conference Information Visualisation (IV)* (pp. 480–485). IEEE. <https://doi.org/10.1109/IV51561.2020.00083>
- Panadero, E., & Alonso-Tapia, J. (2014). How do students self-regulate? Review of Zimmerman's cyclical model of self-regulated learning. *Anales de Psicología*, 30(2), 450–462. <http://dx.doi.org/10.6018/analesps.30.2.167221>
- Peng, R., & Fu, R. (2021). The effect of Chinese EFL students' learning motivation on learning outcomes within a blended learning environment. *Australasian Journal of Educational Technology*, 37(6), 61–74. <https://doi.org/10.14742/ajet.6235>

- Pham, Q. H. P. (2022). A goal-based writing program in the EFL writing context: implementation and results. *Innovation in Language Learning and Teaching*, 17(2), 278–290. <https://doi.org/10.1080/17501229.2021.2025381>
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>
- Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research*, 42(1), 185–227. <https://doi.org/10.1080/00273170701341316>
- Qureshi, M. A., Khaskheli, A., Qureshi, J. A., Raza, S. A., & Yousufi, S. Q. (2021). Factors affecting students' learning performance through collaborative learning and engagement. *Interactive Learning Environments*, 31(4), 2371–2391. <https://doi.org/10.1080/10494820.2021.1884886>
- Ross, J. A. (2019). The reliability, validity, and utility of self-assessment. *Practical Assessment, Research, and Evaluation*, 11(10), 1–13 <http://hdl.handle.net/1807/30005>
- Ross, J. A., Hogaboam-Gray, A., & Rolheiser, C. (2002). Student self-evaluation in grade 5-6 mathematics effects on problem-solving achievement. *Educational Assessment*, 8(1), 43–58. https://doi.org/10.1207/S15326977EA0801_03
- Ross, J. A., Rolheiser, C., & Hogaboam-Gray, A. (1999). Effects of self-evaluation training on narrative writing. *Assessing Writing*, 6(1), 107–132. [https://doi.org/10.1016/S1075-2935\(99\)00003-3](https://doi.org/10.1016/S1075-2935(99)00003-3)
- Roth, A., Ogrin, S., & Schmitz, B. (2016). Assessing self-regulated learning in higher education: A systematic literature review of self-report instruments. *Educational Assessment, Evaluation and Accountability*, 28, 225–250. <https://doi.org/10.1007/s11092-015-9229-2>
- Rowe, D. A., Mazzotti, V. L., Ingram, A., & Lee, S. (2017). Effects of goal-setting instruction on academic engagement for students at risk. *Career Development and Transition for Exceptional Individuals*, 40(1), 25–35. <https://doi.org/10.1177/2165143416678175>
- Sagayadevan, V., & Jeyaraj, S. (2012). The role of emotional engagement in lecturer-student interaction and the impact on academic outcomes of student achievement and learning. *Journal of the Scholarship of Teaching and Learning*, 12(3), 1–30.
- Salmerón Gómez, R., García Pérez, J., López Martín, M. D. M., & García, C. G. (2016). Collinearity diagnostic applied in ridge estimation through the variance inflation factor. *Journal of Applied Statistics*, 43(10), 1831–1849. <https://doi.org/10.1080/02664763.2015.1120712>
- Schaufeli, W. B., Martinez, I. M., Pinto, A. M., Salanova, M., & Bakker, A. B. (2002). Burnout and engagement in university students: A cross-national study. *Journal of Cross-cultural Psychology*, 33(5), 464–481. <https://doi.org/10.1177/0022022102033005003>
- Shih, Y. C., & Reynolds, B. L. (2018). The effects of integrating goal setting and reading strategy instruction on English reading proficiency and learning motivation: A quasi-experimental study. *Applied Linguistics Review*, 9(1), 35–62. <https://doi.org/10.1515/applirev-2016-1022>
- Shrestha, N. (2020). Detecting multicollinearity in regression analysis. *American Journal of Applied Mathematics and Statistics*, 8(2), 39–42. <https://doi.org/10.12691/ajams-8-2-1>
- Shrestha, N. (2021). Factor analysis as a tool for survey analysis. *American Journal of Applied Mathematics and Statistics*, 9(1), 4–11. <https://doi.org/10.12691/ajams-9-1-2>
- Sides, J. D., & Cuevas, J. A. (2020). Effect of goal setting for motivation, self-efficacy, and performance in elementary mathematics. *International Journal of Instruction*, 13(4), 1–16. <https://doi.org/10.29333/iji.2020.1341a>
- Skinner, E. A., & Pitzer, J. R. (2012). Developmental dynamics of student engagement, coping, and everyday resilience. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 21–44). Springer. https://doi.org/10.1007/978-1-4614-2018-7_2
- Skinner, E. A., Wellborn, J. G., & Connell, J. P. (1990). What it takes to do well in school and whether I've got it: A process model of perceived control and children's engagement and achievement in school. *Journal of Educational Psychology*, 82(1), 22–32. <https://doi.org/10.1037/0022-0663.82.1.22>
- Tehseen, S., Ramayah, T., & Sajilan, S. (2017). Testing and controlling for common method variance: A review of available methods. *Journal of Management Sciences*, 4(2), 142–168. <https://doi.org/10.20547/jms.2014.1704202>
- Wang, S., & Zhang, D. (2020). Perceived teacher feedback and academic performance: The mediating effect of learning engagement and moderating effect of assessment characteristics. *Assessment & Evaluation in Higher Education*, 45(7), 973–987. <https://doi.org/10.1080/02602938.2020.1718599>

- Wang, Z. (2023). Psychological factors and production behaviors of Chinese undergraduate EFL learners. *Plos One*, 18(7), e0288014. <https://doi.org/10.1371/journal.pone.0288014>
- Wu, H., Li, S., Zheng, J., & Guo, J. (2020). Medical students' motivation and academic performance: The mediating roles of self-efficacy and learning engagement. *Medical Education Online*, 25(1), 1742964. <https://doi.org/10.1080/10872981.2020.1742964>
- Yuan, C. (2020). The Influence of affective factors and cognitive engagement on students' English proficiency. *Journal of Language Teaching & Research*, 11(4), Article 645. <https://doi.org/10.17507/jltr.1104.16>
- Zhang, B., & Shao, X. (2021). A study of Chinese college students' English learning motivation. *Open Journal of Social Sciences*, 9(7), 273–279. <https://doi.org/10.4236/jss.2021.97019>
- Zhang, H., Dai, Y., & Wang, Y. (2020). Motivation and second foreign language proficiency: The mediating role of foreign language enjoyment. *Sustainability*, 12(4), Article 1302. <https://doi.org/10.3390/su12041302>
- Zhao, R. & Pu, T. Y. (2018). A survey and problem study on the learning motivation of college students. *Sixiang Zhengzhike Yanjiu*, (06), 92–97, Article 154.
- Zhu, A., Mofreh, S. A. M., & Salem, S. (2023). The effect of goal setting based on China's standard of English proficiency scales on reading achievement. *Sustainability*, 15(5), Article 4519. <https://doi.org/10.3390/su15054519>
- Zimmerman, B. J., & Moylan, A. R. (2009). Self-regulation: Where metacognition and motivation intersect. In Hacker, D.J., Dunlosky, J., & Graesser, A.C. (Eds.), *Handbook of metacognition in education* (1st ed., pp. 299–315). Routledge. <https://doi.org/10.4324/9780203876428>
- Zimmerman, B. J., Bandura, A., & Martinez-Pons, M. (1992). Self-motivation for academic attainment: The role of self-efficacy beliefs and personal goal setting. *American Educational Research Journal*, 29(3), 663–676. <https://doi.org/10.3102/0002831202900>

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