



Understanding how learning motivation connects peer dynamics to English academic outcomes

Ying Wang¹

Cheng Xu^{2*}

Chen Chen³

^{1,2}School of Education, Woosuk University, 469, Samnye-Ro, Samnye-Eup, Wanju-Gun, Jeollabuk-Do, 55339, South Korea.

¹Email: yingwang786@gmail.com

²Email: wangying1914@gmail.com

³Physical Education Department, Kunsan National University, 541150 Gunsan, Republic of Korea.

³Physical Education Department, Yanshan University, Qinhuangdao City, Hebei Province, China.

³Email: cc6803633@gmail.com



(+ Corresponding author)

ABSTRACT

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Relationships among peers have notably contributed to learners' social environment, influencing their uptake of learning for a long time, although the psychology underlying English achievement remains under-addressed. This study examines the mediating role of learning motivation in the relationship between English academic achievement and peer influence among Chinese primary and middle school students. A quantitative cross-sectional survey was conducted with 159 students sampled from Years 4 to 9 in Tai'an, Shandong Province, China. Descriptive statistics, correlation analysis, reliability testing, regression analysis, and mediation analysis were used for data analysis, with bootstrapping. The key results revealed that English academic achievement was significantly predicted by peer influence ($p < 0.001$, $\beta = 0.396$). Peer influence predicted learning motivation ($p < 0.001$, $\beta = 0.514$), which, in turn, was strongly correlated with English performance ($p < 0.001$, $\beta = 0.541$). The mediated effect was significant (indirect effect = 0.492, 95% CI [0.309, 0.697]), supporting the role of the indirect pathway. Language learning outcomes were understood through the integration of socio-psychological perspectives. Students placed in academically positive peer environments are highly motivated, which leads to better language outcomes and improved English academic performance. Self-reported data from a single geographic region and a cross-sectional design limit the generalizability of the findings. In the future, researchers must focus on longitudinal mediation models to examine the interaction between peer environments and motivational processes across time points.

Contribution/Originality: The study contributes to a mechanism-oriented understanding of how the translation of social context translates into language learning outcomes, integrating learning motivation, peer influence, and English academic achievement into a unified framework. Framing learning motivation as the underlying psychological mechanism offers an alternative to considering parallel predictors alongside peer influence.

1. INTRODUCTION

Academic performance continues to be one of the most common metrics of educational efficiency worldwide. Beyond individual grades, it showcases the overall ability of education systems nationally to develop knowledge, skills, and long-term development (Shao, Kang, Lu, Zhang, & Li, 2024). In most multilingual and developmental settings, improvements in academic achievement are closely linked to personal development and future socio-economic participation (Alogiliy, 2024). In the broader context, English has become one of the leading global

languages for academic study, digital participation, cross-cultural communication, and work mobility (Ishida, Manalo, & Sekiyama, 2024). As a result, fluency in English has become a necessary outcome of school education rather than a supplementary skill.

One of the targeted mechanisms could be learning motivation, which plays an integral role in academic success. Wang and Bai (2023) point out that learning objectives could be better internalised by those who are highly motivated, despite cognitive challenges, willingness to put in effort and the quality of instructional designs also play a vital role. In the long term, evidence has proven the effectiveness of long-term investment in skill acquisition and its link to sustained dedication and extended time, leading to enhanced performance for those who engage deeply with English as a Foreign Language (EFL) learning (Chen, Bian, & Zhu, 2023; Zhang & Wang, 2023). These count as effective strategies that reinforce the idea that motivation in isolation is not adequate for English achievement.

At the same time, learning is not an isolated process. Peer relationships are a strong social environment in which academic behaviours are inculcated. Studies consistently show that adolescents' academic interests and motivation are strongly connected to their peer conditions (Shao et al., 2024). In elementary schools, and especially in middle schools, peers significantly influence attitudes towards studying, classroom engagement, and identity formation in both academic and personal domains (Kaynak, Kaynak, & Sevgili Koçak, 2023). Academic performance is increasingly perceived as the outcome of dynamic relationships between individual traits and situational influences, such as engagement and motivational processes embedded in social contexts (Anyichie & Butler, 2023). In learning a second language, external factors like teachers, peers, and parents all play a role in motivational development (Ishida et al., 2024). Although empirical research has increased, it remains unclear how peer influence translates into academic performance (Shao et al., 2024). Specifically, the role of social processes within peer groups in stimulating internal motivational processes that ultimately influence achievement outcomes remains unclear. These pathways are crucial for understanding how to design specific educational interventions that harness peer context to enhance learning success.

However, an important research gap persists in the literature. In the majority of the studies, better academic outcomes and motivation are linked to peer influence, which enables the prediction of achievement. However, fewer studies have focused on the mechanism underlying the translation of peer influence into English achievement. In other words, research in this domain is required, as the clear absence of this mechanism calls for an elaborate explanation of how students' learning motivation could be utilized as a predictor by peer influence. This gap is highly visible in educational research involving younger learners in primary and middle school settings. Although peer influence has been predicted to play a powerful role, its effectiveness under the mediation of learning motivation has not been examined enough. Under-exploration of this pathway renders educational interventions fragmented, shifting the focus either to motivation or to peer relationships in isolation, rather than investigating their interaction. This study positions learning motivation as a mediating variable and investigates the relationship between English academic achievement and peer influence among Chinese primary and middle school students in Shandong Province, addressing this research gap. This integrates the variables into a single conceptual model and highlights why and how peer influence is important. This strategy is theoretically significant as it establishes a connection between motivational psychology and social influence. In practice as well, the importance of this framework lies in strengthening internal motivation among learners and peer support, as it could help design classroom environments and teaching plans to facilitate this model.

1.1. Research Objective

To investigate whether learning motivation mediates the relationship between peer influence and English academic achievement among Chinese primary and middle school students.

1.2. Research Question

To address the research gap, a research question was formulated.

RQ: Does learning motivation mediate the relationship between peer influence and English academic achievement among Chinese primary and middle school students?

2. LITERATURE REVIEW

2.1. Peer Relationships as Drivers of Learning Motivation

Learning environments are social spaces in which student motivation cannot be fully understood. Many theoretical approaches highlight that academic participation is nurtured not only by dispositional factors but also by interpersonal experiences within peer groups. According to the literature by Howard, Bureau, Guay, Chong, and Ryan (2021), Self-Determination Theory (SDT) suggests that motivation is enhanced when 3 foundational psychological needs are met: autonomy, relatedness, and competence. The study claims that learners who feel competent, have a sense of meaningful choice, and establish supportive relationships tend to internalize academic goals. This type of internalization promotes positive attitudes towards learning, especially when students see their academic work as relevant to them (Howard et al., 2021). In support, evidence from Bordbar (2021) indicates that learning environments that address students' specific needs can foster deeper learning and long-term engagement. However, prior studies do not explain how student belief systems, perceived competence, and value orientations serve as determinants of motivation and influence behaviours such as persistence, self-regulation, and active participation in the classroom (Christ, Capon-Sieber, Grob, & Praetorius, 2022). Notably, these are psychological processes that are entrenched in social and cultural realms. Hence, evidence suggests that peer interaction is relevant to the influence of motivational orientations, particularly during students' collaborative learning.

At the same time, Vyas and Sharma (2022) emphasise that Gardner's Socio-Educational Model posits that the acquisition of a second language occurs within social and cultural contexts, where community attitudes and shared beliefs shape achievement outcomes. This makes social learning perspectives and SDT relevant to educational research, as they elaborate on how social environments foster intrinsic motivation and alleviate external pressure. Although the role of teacher support in engagement has long been discussed as a motivator, recent data indicate that peer support can also boost academic engagement (Prananto, Cahyadi, Lubis, & Hinduan, 2025). Hence, peer relationships act as anchors of motivation, shaping students' attitudes toward learning and fostering cooperative, goal-focused learning in the classroom. However, most studies treated peer support as a common social factor, which remains underexplored in the context of peer influence and its role in shaping internal motivation among EFL learners.

Peer dynamics are most evident in classrooms, which are among the most significant social spaces. Students can directly influence each other's attitudes and effort levels because they are working collaboratively towards the same academic goal. In a literature review by Ye (2024), communicative interaction is specifically needed in foreign language classrooms, and the state of peer relationships is particularly important there. The authors therefore claim that positive peer conditions promote more interest, emotional investment, and dedication to learning (Ye, 2024). In support of this finding, Kang and Wu (2022) say that classrooms where language is taught can also be considered mini-communities in which students and teachers discuss academic challenges together, and the comprehensive atmosphere plays a major role in shaping learners' growth. Vyas and Sharma (2022) believe that the degree of student engagement is also determined by socioeconomic and cultural backgrounds (Vyas & Sharma, 2022). In contrast to Christ et al. (2022), who agree that agreement between teacher and student values is enough to achieve more positive academic performance. However, they do not talk about the behavioral norms and learning habits that are more strongly influenced by peers as students get older (Dias, Veríssimo, Carneiro, & Duarte, 2024). Taken together, these findings suggest a mechanism that may shape motivation, although prior studies lack adequately tested pathways for younger EFL learners.

2.2. Academic Achievement in Relation to Motivation

The effects of motivation vary in their influence on students' academic performance. Empirical evidence by Howard et al. (2021) demonstrates that internally regulated motivation yields stronger educational outcomes than externally imposed forms. SDT is a valuable approach for explaining this distinction by distinguishing between types of regulation based on their quality. Hereby, the authors claim that identified regulation and intrinsic motivation, specifically, are highly and positively correlated with better academic outcomes, in comparison to ego, or inner pressure (which has even more complex implications on learner psychology and results in short-term engagement with adverse emotional responses) (Howard et al., 2021). Hence, motivation is treated in the present study not as a predictor of achievement but as a mediator influencing English performance among EFL learners. At the same time, Kang and Wu (2022) highlight that emotional experiences in learning settings do not occur only as a result of academic activity; they also influence future performance by affecting engagement, strategy application, and competence acumen. The authors refer to this as the control-value theory, which further explains that positive emotions such as pride, enjoyment, and hope boost performance. In contrast, boredom and anxiety may weaken it Kang and Wu (2022). The Goal Theory by Jannini, Akdemir, and Menekse (2024) supports the control-value theory, focusing on the definition of success that students coin, which drives their effort and perseverance. The literature collectively suggests that goals focused on mastery (greater improvement and skill acquisition) are associated with better self-concepts, higher task value, greater cognitive engagement, and increased independent learning behaviours (Cheng, 2023). Neither Yeung, Craven, and Kaur (2012) nor Kang and Wu (2022) explain why language education for EFL learners could be more dependent on motivation than on perseverance, emotional regulation, and endurance, as claimed by Qizi and Azamovna (2025) in their evidence. This is especially relevant in language learning, as they are socially embedded and inherently interactive. Therefore, this study tests whether learning motivation functions as a mediating mechanism through which peer influence shapes English academic achievement among EFL learners.

2.3. Mediation Frameworks in Educational Inquiry

Mediation analysis aligns with the current study, as Self-Determination Theory and Social Cognitive Theory both examine how achievement can be realized through internal psychological pathways. In this model, peer influence is represented by the social environment, internal mechanism by learning motivation, and English academic achievement by the outcomes of these pathways. Instead of assuming direct relationships between predictors and outcomes, researchers are increasingly aware that the mechanisms of action and the reasons some effects occur are usually mediated by intermediate processes. From a constructivist point of view, academic achievement is not solely determined by the standard of instruction but rather by students' active participation in learning opportunities. In this opinion, teaching indirectly affects students' behavioral and cognitive engagement in classroom tasks (Christ et al., 2022). Constructivist learning theory thus operationalizes success as the result of a stratified process rather than individual, linear influences. Likewise, expectancy-value theory emphasizes mediating processes, as expressed by Bordbar (2021). Students' persistence and performance can be related to their interpretation of tasks and the value they attach to them. In this context, motivation is expected to be an indicator of engagement not only in formal schooling but also in informal learning settings, leading to long-term academic growth (Wang & Xue, 2022). Empirical studies often find that the connection between education occurs via non-linear routes, which are best observed in mediation models. For example, teacher support has been shown to positively influence student engagement through indirect mechanisms involving students' self-beliefs and emotions (Bordbar, 2021). Similarly, enthusiasm in foreign language learning has been found to mediate the relationship between motivational orientation and language proficiency (Vyas & Sharma, 2022). All these studies have shown that mediation analysis provides reliable insight into both psychological and contextual mechanisms underlying learning outcomes and contributes to theoretical explanations as well as practical teaching practice. More complex models of mediation have also depicted the interrelations among social support, motivational processes, and academic performance across various pathways.

Studies have shown that teacher rapport and displays of caring can positively affect engagement, especially in conjunction with positive classroom climates (Ye, 2024). Similarly, structural equation modeling has revealed that a positive learning climate is directly predictive of participants' involvement in English-as-a-Foreign-Language contexts, whereas a negative climate inhibits involvement (Ye, 2024). The Goal Setting Theory is also compatible with those views, implying that students' performance is determined by goals shaped by their individual characteristics and contextual influences (Cheng, 2023). In other situations, the direct, ad hoc effects of teaching quality on achievement are more evident when confounding variables are accounted for. The uncoupling of the standard of instruction and the processes of engaging the student makes it possible to establish the emotional, behavioral, cognitive, and motivational conditions, including attention and emotional engagement, which eventually result in performance (Christ et al., 2022). Despite this growing body of evidence, most prior mediation studies have focused primarily on teacher support, general classroom climate, or higher-education samples, leaving the specific role of peer influence among younger EFL learners relatively underexplored. Although the modus operandi of peer influence remains underexplored, especially among middle and primary school learners. Therefore, this study examines motivational pathways that mediate English academic achievement, particularly under peer influence (social contexts), and intends to develop both direct and indirect influences on the latter.

On this theoretical and empirical basis, the research hypotheses in the current study were as follows:

H₁: Academic achievement in English is positively predicted by peer influence.

H₂: Peer influence is a positive predictor of learning motivation.

H₃: English academic achievement is positively related to learning motivation.

Moreover, a mediation hypothesis was developed:

H₄: Learning motivation is a mediating variable between the relationship between influence by peers and English academic achievement.

3. METHODOLOGY

3.1. Design of Research and Conceptual Orientation

The paper adopted the quantitative research design with a conceptual orientation as presented in the following section. The study aimed to determine the role of learning motivation as an explanatory factor linking peer influence and the academic achievements of Chinese students in English as a second language. A cross-sectional survey design was considered to determine the relationship between peer influence and academic achievement in English as a second language among Chinese students and to explain the relationships between the variables at a single point in time while testing mediation models in educational settings (Creswell & Creswell, 2018). This relationship was tested through the theoretical lens of Self-Determination Theory and Social Cognitive Theory Bandura (1986), which collectively examine the functional influence of learner motivation on the relationship between peer influence and English academic achievements. Proposed by Ryan and Deci (2020), SDT examines how extrinsic or intrinsic motivation can be either promoted or limited by peer influences through social cues, while SCT reinforces how behaviour and performance affect learning outcomes, positioning peer influence as a precise social predictor of English academic achievement (Hayes, 2018; Williams, Preacher, Allison, Mandell, & Marcus, 2022). A mediation model was developed to elaborate on the influence of peer influence (as an independent variable) on English academic achievement (Dependent variable), offering scope for understanding the causal mechanisms.

3.2. Sample Characteristics and Recruitment Procedures

Students in primary and middle schools (Years 4 to 9) in Tai'an, Shandong Province, China, were selected as the sample (N = 159). Convenience sampling was used to recruit the participants, as it is commonly used in school-based research, whereby access is constrained, although generalizability may be limited. Moreover, convenience sampling is well-suited to mediation and exploratory studies, provided they are appropriately acknowledged (Etikan, Musa, &

Alkassim, 2016). Based on the recommendations for mediation analysis, the adequacy of the sample size was assessed. This suggested that medium-sized indirect effects with significant statistical power could be detected for a sample size of over 100 (Buckley, 2024). Therefore, the sample size was considered adequate for analytical procedures.

Multiple schools were selected for participant recruitment, enhancing the inclusion criteria and sample diversity and enabling students enrolled in English language classes to answer the questionnaire without coercion. The sample size consisted of 64.78% female students and 35.22% male students. Most of the participants were of Han (98.74%), and 1.26% were of ethnic minorities. To contextualize the sample, detailed background information about the participants was collected. Regarding family structure, 78.62 per cent reported having siblings, and 21.38 per cent were only children. There were differences in the habits of the students in learning English outside the classroom: 42.14% spend less than thirty minutes a day learning, 21.38% rarely have time to study after the classroom hours, 20.13% spend 30 to 60 minutes a day learning, and 16.35% spend over 1 hour a day learning. When asked about self-reported achievement in academic performance, 51.57% reported grades of A in English, followed by B (19.50%), C (18.24%), and D (10.06%). The sample size met the minimum statistical criteria for mediation and factor analysis, providing sufficient power to detect medium effects. Buckley (2024) indicates that quantitative research must consider sample size and plan accordingly before data collection to ensure reliable and interpretable results.

3.3. Measures and Instruments

A structured questionnaire with predefined scales, adapted from the existing literature, was developed in both Chinese and English versions to ensure linguistic equivalence. The translation and back-translation strategies, following Brislin (1970) guidelines for cross-cultural research, were applied to maintain the rigour of this study. A 13-item self-report scale covering four core language competencies, such as speaking, listening, reading, and writing, was developed for assessment of English academic achievement and perceived competence in major communicative skills. This tool was chosen before in studies such as Richardson, Abraham, and Bond (2012) as an alternative to perceived competence, due to its acceptable validity (during the unavailability of objective scores), albeit with the risk of bias due to self-reported achievement. A 12-item tool was used to measure learning motivation and regulatory dimensions congruent with SDT. Herein, intrinsic motivation, identified regulation, introjected regulation, and external regulation were examined to ensure the study's high quality (Guay, 2022). For example: "one enjoyed studying English" and "was an active learner in a classroom to attain skills and knowledge". A 22-item scale was used to assess peer influence, attitude towards learning English, and social encouragement related to classmates' achievement. Each measure used a five-point Likert scale ranging from Strongly Disagree to Completely Agree. In addition to the main constructs, demographic data were collected, including the family's socioeconomic status, parents' level of education, and prior experience learning English. Additionally, Cronbach's alpha assesses internal consistency and reliability (the degree to which the items on the scale function as measures of a similar dimension) (Edelsbrunner, Simonsmeier, & Schneider, 2025). Values > 0.50 were accepted, and factor loadings were assessed to ensure that the items were represented comprehensively. To evaluate construct validity, Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity were used, and an exploratory factor analysis was conducted to assess the data's underlying factor structure. CFI, TLI, SRMR, and RMSEA were not reported as confirmatory analysis was avoided.

3.4. Procedures for Data Collection

Cross-sectional observational research with validated instruments is methodologically consistent with similar studies such as Sheraba, Orayj, Alqahtani, El-Sokkary, and Khalid (2022). Therefore, the data were collected using standard instructions provided to trained research assistants during school hours, authorised by the schools' review boards. The participants were assured of no adverse consequences on voluntary exit and assured of privacy and confidentiality. The questionnaire was published in simple Chinese and required approximately 25-30 minutes to complete. The procedural questions were clarified by researchers during the survey. All codes were anonymised to

preserve participants' identities, thus enhancing response honesty and reducing social desirability bias, and consent was obtained from parents, as the participants involved were minors. The process spanned 4 weeks, so that the school timetables remained unmodified.

3.5. Analytical Strategy

SPSS 28.0 and the PROCESS macro were used for statistical data analyses. The primary screening involved standardised z-scores to identify outliers, and normality was assessed. Descriptive statistics were used to measure the relationships and variable distributions. Cronbach's alpha was assessed to check for reliability, while KMO and Bartlett's Test of Sphericity were used for exploratory factor analysis (EFA). The relationships among the variables were examined using multiple regression analysis. 5000 bootstrap samples were used to estimate the indirect effect. The PROCESS Model 4 (Hayes, 2018) was used to test for the mediation effect. Listwise deletion was performed to ensure that missing data (<5%) were handled, and the final sample size remained constant across all analyses (n=159). Moreover, a statistical significance level of $\alpha = 0.05$ was set for the standardised R^2 and β values.

4. RESULTS

This section reflects on the descriptive findings at the beginning, followed by a report of the reliability and validity of the findings. The direct effects of peer influence on academic English achievement and the mediating effect of learning motivation have been demonstrated, and the hypothesis summary has finally been laid out.

4.1. Descriptive Profile of Participants

The demographic data and study-related data of participants are summarised in Table 1. The sample was mostly female (64.78 per cent), with 35.22 per cent male. Almost all students were Han (98.74 per cent), and very few were representatives of ethnic minorities (1.26 per cent). Regarding family background, the majority of students (78.62 per cent) had siblings, while only 21.38 per cent were only children. Trends in studying English outside the classroom showed that the biggest number of students (42.14 per cent) spent less than 30 minutes a day on independent work. About one-fifth (21.38 per cent) said that they hardly studied English outside of school. A smaller percentage of students studied 30 to 60 minutes a day (20.13 per cent), and 16.35 per cent studied over 1 hour. Regarding academic performance, more than half of the students (51.57 per cent) said they attained grade A in English. There were 19.50 per cent and 18.24 per cent who reported grades B and C, respectively, and 10.06 per cent who reported grade D performance. The analysis eliminated one of the responses (0.63) as an outlier. These descriptive results provide the sample profile for regression and mediation analyses, as well as reliability.

Table 1. Participant Characteristics and Study Habits (N = 159).

Variables	Category	n	%
Gender	Male	56	35.22
	Female	103	64.78
Ethnicity	Han	157	98.74
	Ethnic minority	2	1.26
Family structure	Only child	34	21.38
	With siblings	125	78.62
Daily English study time (Outside Class)	Rarely study	34	21.38
	< 30 minutes	67	42.14
	30–60 minutes	32	20.13
	> 1 hour	26	16.35
Self-Reported English grade	A	82	51.57
	B	31	19.50
	C	29	18.24
	D	16	10.06
	Excluded (Outlier)	1	0.63

4.2. Reliability and Construct Validity Assessment

Sampling adequacy and internal consistency were also assessed to evaluate the quality of the measurements before hypothesis testing. Table 2 presents the scale reliability, which is used to assess internal consistency. KMO and Bartlett support factorability before multivariate analysis (Table 2). Cronbach's alpha coefficients were estimated to assess the internal consistency of the three main constructs: peer influence, learning motivation, and academic achievement in English. The English Academic Achievement scale had a remarkably high internal consistency ($\alpha = 0.973$), which suggested possible item redundancy. The Peer Influence instrument was highly reliable ($\alpha = 0.886$) across its 22 items. On the same note, the 12-item Learning Motivation scale yielded a high alpha of 0.865. Because all coefficients exceeded the widely used threshold of 0.70, the scales were considered sufficiently reliable to proceed with the mediation and regression analyses. The items in each measure were consistently aligned and worked as stable measures of their respective constructs. Factorability tests were used to assess construct validity (Table 2). The KMO statistic was 0.853, indicating that the sampling was sufficient for factor analysis. Moreover, the Test of Sphericity by Bartlett was significant ($p < .001$), correlations among variables were sufficiently strong, and they did not form an identity matrix. A combination of these findings demonstrates the relevance of factor-based and multivariate analyses of the collected data.

Table 2. Scale Reliability and Factorability Indicators.

Panel A. Internal consistency		
Construct	Number of items	Cronbach's α
English academic achievement	13	0.973
Peer influence	22	0.886
Learning motivation	12	0.865
Panel B. Sampling adequacy and sphericity		
Test	Value	
KMO	0.853	
Bartlett's Test χ^2	16254.574	
Significance (p)	0.000	

4.3. Multiple Linear Regression Results

4.3.1. Peer Influence Predicting English Academic Achievement

Peer influence, as indicated in Table 3, was a statistically significant positive predictor of English achievement. The standardized coefficient ($\beta = 0.396$, $p < .001$) suggests that students who had supportive classmates were more likely to score higher on English.

This association is also supported by the positive t-value ($t = 4.789$). These results support Hypothesis 1, which states that positive peer environments are associated with better academic performance in English. Moreover, motivation to learn showed a stronger predictive value for English achievement ($\beta = 0.541$, $t = 7.644$, $p < 0.001$). This means that students with stronger intrinsic motivation, interest, or goal orientation in learning English are more likely to succeed.

This coefficient is large, indicating that motivation is a more influential factor than peer influence in explaining differences in achievement. Overall, the model explained a statistically significant proportion of the variance in English academic performance ($R^2 = 0.157$). The overall regression equation was statistically significant ($F = 22.930$, $p < .001$), explaining 15.7% of the variance in English academic achievement. Peer influence was a significant positive predictor of English academic achievement ($\beta = 0.396$, $p < .001$), showing a moderate effect size. The relationship between English academic achievement and learning motivation (Hypothesis 3) is examined separately in the mediation analysis represented in Section 4.4.

Table 3. Predictors of English Academic Achievement.

Predictor	B	SE	β	t	p
Intercept	0.952	0.395	—	2.413	0.017
Peer influence	0.693	0.145	0.396	4.789	< 0.001
Model summary:					
$R^2 = 0.157$					
$F = 22.930$					
Model significance: $p < 0.001$					
Dependent variable: English academic achievement					

Table 4. Peer Influence Predicting Learning Motivation.

Predictor	B	SE	β	t	p
Intercept	1.513	0.217	—	6.958	< 0.001
Peer influence	0.608	0.081	0.514	7.513	< 0.001
Model summary:					
$R^2 = 0.264$					
$F(1,157) = 56.451$					
Model significance: $p < 0.001$					
Dependent variable: Learning motivation					

4.3.2. Learning Motivation Predicting English Academic Achievement

The simple linear regression test was used to determine whether peer influence is a significant predictor of learning motivation. According to Table 4, the general regression equation was significant, $F(1, 157) = 56.451$, $p < .001$, indicating that peer influence is a reliable predictor of changes in students' motivational levels. The value of R^2 at 0.264 indicates that peer influence accounts for about 26.4 percent of the variance in learning motivation. This percentage indicates that peer influences are a significant context variable shaping students' intrinsic motivation to learn English.

The standardized regression coefficient ($\beta = 0.514$, $p < .001$) indicates a strong positive association between peer influence and learning motivation. These findings support Hypothesis 2. In Table 5, the predictive role of learning motivation in relation to English academic achievement was further examined within the mediation model. The high t-value ($t = 7.513$) also proves that this relationship is strong.

4.4. Mediation Analysis Results

Mediation testing was conducted on data collected from 159 students to determine whether learning motivation serves as an intermediate mechanism linking peer influence and English performance. The analysis showed that peer influence was a significant predictor of learning motivation ($B = 0.608$, $p < .001$).

Learning motivation, on the other hand, was a significant predictor of English academic achievement ($B = 0.810$, $p < .001$), indicating that greater motivational engagement is associated with better English achievement (Table 5). Peer influence had a statistically significant direct effect on achievement ($B = 0.319$, $p = .012$), although the effect size was reduced (Table 5). The bootstrapped indirect effect was 0.492, with a confidence interval $[0.309, 0.697]$ that did not include zero (Table 5).

This indicates a significant mediation effect. In general, the empirical findings are consistent with H1, H2, and H3, while H4 is supported only through partial mediation (Table 6). Therefore, peer dynamics have a direct impact on achievement and an indirect impact by increasing students' motivation to learn English. Overall, the pattern seems consistent with partial mediation, as reflected collectively by the significant indirect effect and the remaining direct effect.

Table 5. Indirect and Direct Effects in the Mediation Model.

Relationship path	Coefficient (B)	p-value	95% Confidence interval
Peer influence → Learning motivation (a)	0.608	< .001	[0.448, 0.768]
Learning Motivation → English achievement (b)	0.810	< .001	[0.600, 1.019]
Peer influence → English achievement (c')	0.319	.012	[0.072, 0.566]
Indirect effect (a × b)	0.492	—	[0.309, 0.697]

Table 6. Overview of Hypothesis Testing Outcomes.

Hypothesis	Reformulated statement	Decision
H1	Peer influence positively predicts English academic performance.	Supported
H2	Peer influence positively predicts learning motivation.	Supported
H3	Learning motivation positively predicts English academic performance.	Supported
H4	Learning motivation serves as a mediator between English achievement and peer influence.	Partial mediation (Supported)

5. DISCUSSION

This research paper investigated the relationship between learning motivation and the effects of peer pressure on English achievement among Chinese primary and middle school learners. In general, the findings show that the influence of peers on English performance is mediated by two connected paths: a direct path and an indirect path that operates through learning motivation. Taken together, these variables point to the importance of social context and internal psychological processes in shaping the success of language learning. The mediated pathway has a notable impact (Effect = 0.492, BootCI [0.309, 0.697]). To begin with, increased achievement in English was directly linked with peer influence ($\beta = 0.396$, $p < 0.001$). The group of participants showed relatively high academic performance in English, even though they did not spend much time studying outside of school. The distribution suggests a large cohort that attempts to achieve very high levels and may benefit from effective in-class learning strategies and systematic instrumental support. In other words, achievement in this context may be less dependent on solitary study and more strongly shaped by the quality of the classroom learning environment. This trend is consistent with the results of Shao et al. (2024), who found that peer relationships significantly affected students' academic achievement. From the perspective of Social Cognitive Theory (Bandura, 1986), the direct effect can be predicted because students tend to observe, compare, and mimic their peers' attitudes, study habits, and performance protocols, particularly in classrooms where peer approval is prioritized.

Second, learning motivation was also strongly predicted by peer influence ($\beta = 0.514$, $R^2 = 0.264$, $p < 0.001$), indicating that peer dynamics explained about a quarter of the variance in students' motivation. This is a high percentage and points to the incentive value of friendship groups and classroom peer culture. In line with this interpretation, Kaynak et al. (2023) found that peer support can enhance students' sense of belonging, which is closely linked to sustained motivation and improved performance. This trend can be understood from the perspective of Ryan and Deci (2020), who propose that the core conditions required for internalizing motivation and learners' needs (relatedness, autonomy, and competence) may be satisfied in supportive peer environments. This implies that acceptance from peers proficient in English tasks tends to lead to self-endorsement motivation and, in turn, to more meaningful engagement.

Third, English achievement was most strongly associated with learning motivation ($p < 0.001$, $\beta = 0.541$), indicating that greater motivational engagement is associated with better English achievement. Here, motivation is an essential psychological process that fuels effort, enables persistence, and keeps learners engaged, as Chen, Bian, et al. (2023) present. Motivated students are more likely to persevere through tough times, put learning strategies into practice, and stay mentally engaged in language activities. Previous evidence also indicates that constructive academic emotions, especially enjoyment, can reinforce language performance by fostering engagement and confidence (Kang & Wu, 2022). Moreover, teacher support can indirectly affect motivation and performance by enhancing students'

confidence and emotional safety (Liu, Du, & Lu, 2023). According to Ryan and Deci (2020), Self-Determination Theory can be used to conceptualise motivation as a self-regulatory mechanism that is highlighted when learners feel psychologically autonomous, competent, and related. Precisely, students perceive a sense of ownership over their learning (autonomy), feel capable in English tasks (competence), and experience supportive relationships in the classroom (relatedness). This proves that motivation has a strong predictive effect on English achievement in the current study. Above all, the mediation outcomes reveal that learning motivation partially describes the relationship between peers and achievement. Peer influence can have a direct impact on English performance through the sharing of strategies, cooperative practices, and other forms of encouragement, and an indirect influence that promotes achievement by reinforcing students' motivational engagement, which, in turn, leads to higher achievement. This pattern aligns with both the Social Cognitive Theory and SDT (Ryan & Deci, 2020) because it shows how peer environments influence achievement by offering observable models of effective learning behavior and supporting internal motivational regulation. In that regard, the current findings align with previous work by Shao et al. (2024), which identified motivation as a primary psychological mechanism in this relationship.

The mediation results further indicate that learning motivation significantly predicts English academic achievement ($B = 0.810, p < .001$), indicating that greater motivational engagement is associated with better English achievement. Students who find themselves in a learning environment where their peers share the same attitude towards academic effort, display concern, and take English learning seriously are likely to respond to higher levels of motivation themselves. These results are a good indication that Hypothesis 2 is true. On the whole, the findings indicate the significant importance of peer settings in the development of motivational engagement, especially regarding second-language learning. Although the direct influence of peer relationships is well established in this study, partial mediation via motivation was detected as a means of achieving English academic skills. This suggests that peers not only shape learning outcomes, but also cannot be explained by learning motivation in isolation. From an SCT perspective, observation and modelling influence peer relationships since classmates' behaviours are closely observed and their academic performance (among high-achieving peers) is reviewed, thereby helping meet higher standards. Additionally, the fundamental psychology of learners is linked to their relatedness, autonomy, and competence under SDT, which directly determine how students develop stronger intrinsic motivation from peer groups, especially in positive social environments (Gebresilase, Zhao, Taddese, Elka, & Feng, 2025). This positive interaction is often mimicked by teachers, which not only improves academic performance but also reinforces students' self-efficacy, thereby reinforcing the indirect effect of peer relationships. Similar results were reported by Xu (2024), in which student success was linked to supportive learning environments, mediated by self-efficacy. Hence, self-efficacy emerges as the strongest predictor of motivation, which is highly instrumental in goal setting and academic performance.

5.1. Educational Implications

The findings of this research have notable practical implications for schools and teachers who aim to improve English language learning. Since learning motivation was found to be the primary process through which peer influence affects achievement, interventions should not treat social relationships and motivation as separate entities. Rather, schools can strategically create learning situations that foster positive peer groups and increase students' intrinsic motivation to learn. A viable method is to incorporate organised group-based tasks as part of English lessons. Projects such as group work, peer editing, discussion partnerships, drama clubs, and collaborative research projects can enable students to share feedback, practice language, and develop positive academic norms. Previous studies indicate that this type of group interaction may help students to feel stronger as part of the group and, consequently, become more motivated (Kaynak et al., 2023). Interest in language learning is more likely to be sustained when learners are exposed to peer encouragement and a sense of collective responsibility. Another potential strategy is peer mentoring programs. Students with high achievement in English may be matched with students who need more help,

forming mutually beneficial learning relationships. Such systems must be well developed so that mentors are also trained to provide both guidance and emotional support. Continuous monitoring and feedback are vital to ensure that the mentoring relationships foster positive attitudes rather than unhealthy comparisons and dependency. Peer mentoring, when done thoughtfully, can enhance the positive peer effects observed in the present research and lead to motivational development and academic success. In the classroom, educators can focus on teamwork rather than excessive competition. Highly motivated students are more likely to see peer success as an opportunity to support them rather than as a threat when evaluation systems focus on collective goals and shared progress. A cooperative culture may be fostered by establishing common learning goals, collective accountability systems, and shared rewards. Educators can assist learners in establishing team goals, sharing team successes, and recognising the efforts of individuals who benefit the team. These practices combine social reinforcement with motivational development, enhancing emotional involvement and academic persistence. Professional development of teachers is also essential. The teachers must be given the means to foster positive peer interactions, develop constructive ways to manage interpersonal conflict, and devise intrinsically motivating tasks. Training can assist teachers in identifying healthy peer relationships, intervening when negative relationships develop, and deliberately designing cooperative learning experiences. Schools can leverage social influence as a motivational resource for activation and language production by intentionally attending to peer relationships.

6. CONCLUSION

6.1. Key Findings

This study investigated the mediating effect of learning motivation in the relationship between peer influence and English academic achievement among 159 primary and middle school students in China. The interactions with classmates and friends affected the students' academic performance, and whether these effects are partially mediated by motivational processes. The key findings reveal that learning motivation is a significant mediator in the relationship between peer dynamics and English achievement. Although H1, H2, and H3 were supported, H4 was partially supported; and 26% of the variance indicated that peer influence is a strong predictor of learning motivation. This could be explained by social environments created by peers, which act as a powerful source of motivation. Third, learning motivation emerged as the strongest predictor of English academic achievement, with motivated learners among high-achieving classmates showing persistent, consistent, and active engagement in their learning. The mediation analysis further revealed partial mediation, indicating that peer influence affects English achievement through both direct and indirect pathways, with self-efficacy emerging as one of the strongest predictors of motivation when assessed via the SCT. Directly, peers contribute through academic support, whereas indirectly, peer engagement enhances students' motivation, ultimately improving their performance. Overall, the study is limited by a small sample size and requires longitudinal studies to test the mediating role of learning motivation across time and to measure the sustainability of peer relationships.

6.2. Future Research and Limitations

Regardless of its contribution, this study has several limitations that should be considered. Firstly, the sample was selected among the schools in one city in China. Educational practices, peer norms, and cultural expectations vary across regions/countries; thus, the generalisability of these results may be limited. Shao et al. (2024) detect patterns of similarity in mediation models across replicable studies and different educational settings, involving target populations with diverse cultural backgrounds. Most students overestimate their learning abilities, resulting in self-reported social desirability bias that skews the data. Hence, objective indicators need to be integrated with motivational relationships to enhance the study's validity. Moreover, the present conceptual model does not capture the interplay among variables across diverse school contexts, classroom environments, and personality attributes that influence academic performance (Kang & Wu, 2022). This ignores the fact that the causal mechanisms underlying the

English achievements cannot be determined. Finally, the temporal order of events in this mediation model is missing, which is why repeated waves are required in the future to monitor dynamic shifts among students and to trace academic progress across different time points (Chen, Zhu, Xiao, & Que, 2023).

6.3. Recommendations

In accordance with the results, some practical policies can be suggested to reinforce English success through improving peer interactions and student motivation. The recommendations work on three levels: classroom practice, school structures, and home-school collaboration, to develop a supportive and consistent learning environment. In the classroom, teachers are encouraged to focus on cooperative learning rather than competing with each other. By defining success as a group achievement rather than a ranking position, students will be more willing to help each other. Teachers can implement organised group-based English activities, including project groups, discussion partners, collaborative research, and peer-editing circles. Within these environments, students share feedback, enhance their language, and form closer relationships with one another. Extra-curricular activities, including English debate forums, drama clubs, and study groups, may also provide other places in which collaboration and language practice may naturally support one another. Another effective school-wide intervention is peer tutoring systems. Exceptional students can be matched with those who need greater help in English, establishing formal mentoring relationships. Nevertheless, such programs should be well-planned. Mentors need instruction on how to provide academic and emotional support. There is a need to monitor and provide regular feedback so that the relationships are healthy, positive, and beneficial to both parties.

Moreover, educators can be professionally trained to work with cooperative classrooms. Strategies for facilitating group work, constructively resolving interpersonal conflicts, and designing assignments that encourage both teamwork and intrinsic motivation should be included in training. Surveying students about their motivational levels through brief surveys, reflective activities, or observation instruments might assist teachers in modifying their instruction where warranted. Lastly, school initiatives should be supplemented by family involvement. Families can be informed through workshops or parent meetings of the significance of positive peer interactions and encouragement at home. When schools and parents cooperate to reinforce positive, friendly relationships and learning values, students are more likely to enjoy consistent support both within the classroom and beyond.

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Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

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