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Student engagement in foreign language learning: relations with classroom goal structure, self-efficacy, and gender

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The present study examined the effects of classroom goal structure, self-efficacy, and gender on student engagement among college students ($N = 606$) learning English as a foreign language in China. Data analysis using multi-group structural equation modeling found that mastery classroom goal structure impacted male students' engagement both directly and indirectly through self-efficacy, whereas only the indirect path via self-efficacy was significant for female students. Performance classroom goal structure had a significant effect on student engagement for male students but not female students. Thus, self-efficacy can not only impact student engagement but also mediated the relations between mastery classroom goal structure and student engagement regardless of student gender. These findings suggest that creating a classroom environment that highlights the importance of working diligently and holding optimistic beliefs in one's language capacities can promote English learners' engagement across genders. However, a classroom climate that emphasizes demonstrating competence and high performance relative to others might promote engagement for men, but not for women.

KEYWORDS

foreign language learning, student engagement, classroom goal structure, self-efficacy, gender differences

1 Introduction

Student engagement is a vital component of successful foreign language learning, as higher engagement is linked to more proficient language skills (O'Neal et al., 2018; Zhang et al., 2020; Khajavy, 2021). Student engagement in foreign language learning is influenced by learners' individual characteristics such as self-efficacy, grit, motivation, and emotion (Yin, 2018; Khajavy, 2021; Bai et al., 2022) as well as contextual factors including classroom environment, classroom goal structure, and peer interactions (Wei, 2014; Zhang and Hyland, 2018; Sulis and Philp, 2021). Although prior research indicates that both individual and environmental factors are important, most studies have examined these factors separately; more research is needed to examine how these factors may interact in promoting student engagement (Svalberg, 2009; Lawson and Lawson, 2013; Mercer, 2019).

Additionally, previous research studies have found that men and women may have different experiences when learning foreign languages, including differences in motivation, self-efficacy, engagement, and class perceptions (Henry and Cliffordson, 2013; Diseth and Samdal, 2015; Oga-Baldwin and Nakata, 2017). However, although gender differences in specific factors were investigated in previous studies, little research has examined possible

gender differences in terms of the relations among individual and environmental factors (e.g., classroom goal structure, self-efficacy, and student engagement) in the foreign language learning process. Therefore, the present study aimed to investigate the associations among language learners' perceived classroom goal structures, self-efficacy, and student engagement as well as the possible effects of student gender.

1.1 Language learning in the Chinese context

When examining language learning, contextual factors beyond the classroom environment should be considered, since factors such as cultural values and social expectations can influence student learning (King and McInerney, 2014; Wang and Rao, 2019). Previous studies have indicated that Chinese students showed more performance-oriented goals than North American students, likely due to the more competition-oriented educational system in China (Shih, 2005). However, it is an overgeneralization to view Chinese students as only performance-focused (Matsumoto and Yoo, 2006; Wang and Rao, 2019). It is also important to acknowledge important differences between secondary education and university education in China; university education tends to be more mastery-oriented than secondary education (Yu, 2005). In relation to English language learning specifically, English is a core skill for Chinese university students (Li et al., 2008). Many universities in China require students to pass a national English test (i.e., College English Test) before they graduate. However, this test is criterion-rather than norm-referenced. Therefore, mastering the language is more important than outperforming others for Chinese college students' success in English language learning.

1.2 Student engagement

Over the last two decades, a large body of research has indicated that student engagement is directly and indirectly linked to positive learning behaviors and outcomes including critical thinking ability, interest and motivation, and mastery of broad academic skills such as problem-solving (Carini et al., 2006; Christenson et al., 2012; Skinner and Pitzer, 2012; Fredricks et al., 2016; Yin, 2018). Engagement can also serve as a protective factor against negative outcomes such as poor academic performance, student burnout, and school dropout (Krause and Coates, 2008; Finn and Zimmer, 2012; Wang and Eccles, 2012).

Although there has been large variation in how student engagement is defined, there is consensus that engagement is a multidimensional construct with behavioral, cognitive, and emotional aspects (Schaufeli et al., 2002; Fredricks et al., 2016). Schaufeli et al. (2002) conceptualized student engagement in the context of higher education as a fulfilling and positive state of mind, characterized by three dimensions: vigor, dedication, and absorption. Vigor refers to high energy and mental resilience while studying, willingness to engage in effort, and persistence regardless of difficulties; dedication is characterized by being actively and strongly involved in one's study and experiencing a sense of significance, enthusiasm, inspiration, and challenge; and absorption means being fully concentrated and happily engrossed in one's study, whereby time passes quickly and one has difficulties detaching from study or work (Schaufeli et al., 2002, 2006).

1.2.1 Student engagement and language learning

Although students may have domain-general levels of engagement with academic tasks, many students vary in their engagement across content areas (e.g., a student may be more or less engaged in math versus history; Sinatra et al., 2015). However, research on student engagement specific to foreign language learning has not drawn much attention until recent years (Akbari et al., 2016; Mercer, 2019; Zhang et al., 2020; Khajavy, 2021). Although research in this area is limited, there is evidence that engagement can facilitate students' foreign language performance and lead to more fruitful and practical language learning experiences (O'Neal et al., 2018; Zhang and Hyland, 2018; Zhang et al., 2020; Khajavy, 2021). For example, Zhang et al. (2020) found that engagement positively predicted English listening and speaking performance, as well as intention to continue studying English, and moderated the relations of language learning motivation with performance and intention to continue in a sample of Chinese university students.

1.2.2 Student-level predictors of engagement

Student engagement in foreign language learning can be impacted by learner characteristics such as motivation and emotions (Yin, 2018; Khajavy, 2021). As an example, Khajavy (2021) investigated the relations of grit (i.e., perseverance and interest), emotions, and students' language engagement with second language (L2) reading comprehension among college students who learned English as a foreign language in Iran. The results showed that perseverance, interest, and emotions were all significant predictors of engagement, which further affected students' L2 reading comprehension.

1.2.3 Classroom-level predictors of engagement

Along with individual level factors, student engagement can be influenced by contextual factors such as elements of the class environment, course instructors, and peer interactions (Baralt et al., 2016; Zhang and Hyland, 2018; Sulis and Philp, 2021). For example, Sulis and Philp (2021) examined college students' perceptions when learning French as a foreign language in the UK and found that learners were engaged and willing to interact in the target language when they were provided opportunities for challenges along with support to meet these challenges, received support that matched their learning needs and interests, and had positive relationships with peers and teachers.

1.3 Self-efficacy

Self-efficacy is defined as an individual's beliefs in his or her perceived capabilities to complete a goal-oriented activity or task in a particular setting (Bandura, 1997). In academic settings, students who feel highly efficacious about learning are more likely to set challenging learning goals, apply effective learning strategies, and persist regardless of failures; in contrast, those with low self-efficacy are inclined to choose easy academic tasks, expend less effort, and be more anxious in the face of obstacles (Bandura, 1997; Stevens et al., 2004; Ouweneel et al., 2013; Mills, 2014). In other words, self-efficacious students are motivated and engaged in their learning, which further increases their competence as learners.

1.3.1 Self-efficacy and language learning

When it comes to studies in foreign language learning, previous literature has revealed that self-efficacy is positively related to engagement (Graham, 2007; Bai et al., 2022) and language proficiency (Mills et al., 2006, 2007; Barber et al., 2015). More specifically, higher self-efficacy relates to greater engagement, which further enhances students' language skills. In an example, Busse and Walter (2013) found positive relationships between self-efficacy beliefs and self-perceived effort expended in the language learning process in a group of first-year college students learning German as a foreign language. Consistent with Busse and Walter's findings, when Bai et al. (2022) explored the relations between motivational factors (e.g., academic self-efficacy) and learning behaviors (e.g., class engagement) among high school students learning English as a foreign language in Singapore, academic self-efficacy was a significant predictor of class engagement after controlling for other variables for both male and female students.

1.3.2 Student-level predictors of self-efficacy

A body of studies have revealed that self-efficacy, especially self-efficacy in language learning, was influenced by other individual factors, including L2 learning motivation, interest, and anxiety (Woodrow, 2011; Raoofi et al., 2012; Roshandel et al., 2018). For example, Woodrow (2011) examined the relations between English writing anxiety, self-efficacy, and English writing performance among college students in China and found that students' English writing anxiety significantly predicted their writing self-efficacy, which in turn predicted their English writing performance.

1.3.3 Classroom-level predictors of self-efficacy

Apart from the internal factors, studies have also indicated that external factors such as classroom climate, feedback from teachers, and interaction with teachers and peers can affect learners' self-efficacy in language learning (Gorsuch, 2009; Moghari et al., 2011). As an example, Gorsuch (2009) found that positive classroom environment, interaction between instructors and students, and interaction among peers were related to greater language learning self-efficacy among US undergraduate students.

1.4 Classroom goal structure

Research on classroom goal structure posits that teachers convey various motivational messages to their students through instructional practices (Ames, 1992). Initially, two types of classroom goal structures were identified: mastery-oriented and performance-oriented (Ames and Archer, 1988; Ames, 1992). The mastery-oriented classroom goal structure refers to students' perceptions of aspects of the classroom climate that highlight learning, effort, and diligence in honing their skills. Conversely, the performance-oriented classroom goal structure describes students' perceptions of elements of the classroom that underscore their abilities relative to those of others and demonstrate their competence.

Empirical studies have indicated that mastery-oriented classroom goal structures are related to adaptive patterns of learning (Michou et al., 2013; Uçar and Sungur, 2017; Gertsakis et al., 2021). For example, in a study of science learning among middle school students in Turkey, Uçar and Sungur (2017) found that students who perceived mastery goal structures showed higher engagement and self-efficacy in science classes. However, research on the role of performance-oriented goal structures has not reached a consensus. Some research has revealed that performance-oriented classroom goal structure was associated with maladaptive learning behaviors or had no association with learners' motivation or behaviors (Middleton and Midgley, 1997; Ohtani et al., 2013). On the other hand, a few studies reported that a performance goal structure could facilitate learning (Pajares et al., 2000; Lavasani et al., 2011). Thus, the relations among classroom goal structures and students' learning behaviors and outcomes are still inconsistent in various studies and need to be investigated further.

1.4.1 Classroom goal structure and language learning

With a limited amount of research examining the role of classroom goal structure in foreign language learning, evidence indicates that mastery-oriented classroom goal structures can positively predict students' language learning motivation and behaviors (Wei, 2014; Bardach et al., 2018). For example, Wei (2014) examined the relations among Chinese college students' perceptions of English classroom goal structures, L2 motivational self-system (e.g., ideal and ought L2 self), and motivated behavior when learning English. The results showed more positive impacts of mastery classroom goal structure than of performance classroom goal structure. However, little research has been conducted to examine the relations between classroom goal structure and other motivational outcomes (e.g., self-efficacy and student engagement) in foreign language learning contexts.

1.5 Gender differences in foreign language learning

Traditional Chinese culture advocates that men should be brave, assertive, and dominant, whereas women should be subordinate to men and behave in more passive or submissive ways (Li, 1998; Ho et al., 2020; Xu et al., 2022). Although the status of women in China has improved in recent decades (United Nations Development Programme, 2024), Chinese women still experience gender discrimination in the workplace (Kuhn and Shen, 2013; Zhang et al., 2021) and there is a continuing expectation that women will be the ones primarily responsible for taking care of home and children (Leung, 2003; Zhang et al., 2022), whereas men will be responsible for supporting the family financially (Qing, 2020). These gendered expectations may influence college students in a variety of ways, such as choice of major and career aspirations (Yang et al., 2024).

As a result of these gendered expectations and socialization experiences, gender might play a role in students' language learning (Meece et al., 2006; Oga-Baldwin and Nakata, 2017). Research has found that male and female students engage differently with learning foreign languages (Henry and Cliffordson, 2013; Oga-Baldwin and Nakata, 2017). Specifically, female students on average hold a more positive attitude toward foreign cultures and language communities and favor interdependence and social collectivism more than male students when learning a foreign language, which may contribute to greater language learning achievement among female students (Meece et al., 2006). In addition, teachers may have differing expectations for students based on gender (Wang et al., 2023), which may in turn affect student engagement and performance (Li and Rubie-Davies, 2017).

1.5.1 Gender and language learning self-efficacy

Previous studies have explored gender differences in students' language self-efficacy. However, the research literature has not reached a consensus. Some studies revealed that female students reported stronger self-efficacy in language learning than male students (Pajares and Valiante, 2001; Wang et al., 2013; Kim et al., 2015), whereas others found male students had higher self-efficacy in English language learning than female students (Bai et al., 2022). Still other research found no gender differences in self-efficacy (Schnell et al., 2015).

1.5.2 Gender and classroom goal structure

Although gender differences have been investigated with regard to student engagement and self-efficacy in foreign language learning, this issue has rarely been discussed in previous studies on the effects of language learners' perceived classroom goal structure on their language learning. In the literature on classroom goal structure in other academic domains, perceived classroom goal structure appeared to play a more important role for male students in general (Linnenbrink-Garcia et al., 2008; Diseth and Samdal, 2015), however it is not clear whether this would apply in foreign language learning.

1.6 The current study

In summary, student engagement, self-efficacy, and classroom goal structure are found to be important factors in students' learning and academic performance (Wei, 2014; Khajavy, 2021; Bai et al., 2022). However, little research has investigated the interactive relations of these factors simultaneously, especially in the language learning process. Also, although previous research has explored gender differences in student engagement and self-efficacy, few studies have discussed gender differences in the relationships among these factors (i.e., classroom goal structure, self-efficacy, student engagement). Therefore, the purpose of this study was to explore the relations among classroom goal structure, self-efficacy, and student engagement, as well as the possible role of gender in such complex associations. Three research questions were addressed in this study:

1. Do mastery classroom goal structure and performance classroom goal structure have direct effects on self-efficacy and student engagement in English language learning across genders?
2. Does self-efficacy have a direct effect on student engagement in English language learning across genders?
3. Do the two types of classroom goal structures have indirect effects on student engagement in English language learning through self-efficacy across genders?

2 Method

2.1 Participants

Participants were 606 university students recruited from three universities in northeastern China. All participants were English major students in different tracks, including English education, English translation, English and international business, and British and American literature. There were 443 female students (73.1%) and 163 male students (26.9%) in this sample, which was consistent with the overall gender proportion of English majors. The age range of the participants was 18–24 years ($M = 20.05$, $SD = 1.05$).

2.2 Procedure

The study was approved by the institutional research board at the University of Kansas. During their language classes, participants were provided with an informed consent statement. Those who consented completed measures in paper and pencil format. Participation in this research project was voluntary and anonymous.

2.3 Measures

Items in the present study were all phrased in terms of "English class" and "learning English" rather than "class" and "learning" in general. All items in the current study were measured on a 7-point Likert scale from *strongly disagree* (1) to *strongly agree* (7).

2.3.1 Classroom goal structure

Classroom goal structures in English class were assessed using Wei's (2014) measure, which has been used to measure the English classroom goal structure among Chinese college students with good reliability and validity. Two subscales were included: mastery-oriented classroom goal structure (5 items; e.g., *My English teacher wants us to understand our work, not just memorize it*), and performance-oriented classroom goal structure (5 items; e.g., *my English teacher calls on those students who get good grades more than other students*). The Cronbach's alpha coefficients in the current sample for both measures were good ($\alpha = 0.82$; 0.80, respectively).

2.3.2 Self-efficacy

Self-efficacy in learning English was assessed by adapting Wang et al.'s (2001) measure (10 items; e.g., *It is easy for me to stick to my aims and accomplish my goals when learning English*). This measure was originally used to assess students' academic self-efficacy in China, it has been widely used and shows good validity and reliability (Fu et al., 2005; Zhang et al., 2015). The Cronbach's alpha value of this scale for the current study was good ($\alpha = 0.91$).

2.3.3 Student engagement

Items to measure student engagement were adapted from UWES–9S (Schaufeli et al., 2006) and the Chinese version of UWES–S (Fang et al., 2008). These measures showed good reliability and validity, and have been widely used in different countries (Chen and Lai, 2017; Carmona-Halty et al., 2019). The scale included nine items, three items for each of three subdimensions: vigor (i.e., high levels of energy and mental resilience, willingness to invest effort in study, and persistence through difficulties), dedication (i.e., a sense of significance, enthusiasm, inspiration, and challenge), and absorption (i.e., being fully concentrated and engrossed in study). The Cronbach's alpha coefficient for this scale was 0.92.

2.4 Data analyses

Relations among variables were tested using structural equation modeling (SEM) for the full sample, and gender differences were examined using multi-group structural equation modeling (MGSEM). Hair et al. (2012) recommended that before testing the relationships of a group of variables in a structural model, all measurement models of these variables should be first validated using confirmatory factor analysis (CFA). The CFA aims to confirm the relationships between indicators and latent variables based on theoretical and empirical considerations and compare between nested models using a chi-square difference test (Kline, 2005). Also, before MGSEM was conducted, measurement invariance analysis was needed ensure the measures were invariant for different groups (Schmitt and Kuljanin, 2008). Both SEM and MGSEM were estimated with full information maximum likelihood (FIML), since there were missing data in the current sample. However, the missing data in the present study were less than 5% (0.19%), which is considered inconsequential (Schafer, 1999). The following indices are presented as indicators of global model fits: Chi-square, comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardized root mean square residuals (SRMR). Typically, CFI values ≥0.90, RMSEA values <0.08, and SRMR <0.08 indicate an acceptable global model fit (Byrne, 2001). In addition, based on Chen's (2007) recommendations for evaluating the measurement invariance among the models, a change of ≤0.01 in CFI and a change of ≤0.015 in RMSEA indicate invariance. The mediated effects were conducted by a bootstrapping approach (MacKinnon, 2008). All the analyses were conducted using the Lavaan Package in 4.3.0 (Rosseel, 2012).

3 Results

3.1 Descriptive statistics

For all samples (full sample, male students, and female students), the means of mastery classroom goal structure, self-efficacy, and engagement were higher than the midpoint of the scale, whereas performance classroom goal structure was lower than the midpoint of the scale (see Tables 1–3). The results also showed that all study variables except performance classroom goal structure in the full sample and the male sample were significantly related to student engagement. Also, self-efficacy showed the highest correlations with student engagement across the samples.

TABLE 1 Descriptive statistics for full sample.

	MC	PC	SE	EN
MC	--			
PC	−0.18**	--		
SE	0.30**	−0.001	--	
EN	0.24**	−0.04	0.52**	--
M	5.55	3.75	4.28	4.52
SD	0.94	1.16	1.17	0.98

MC, mastery classroom goal structure; PC, performance classroom goal structure; SE, self-efficacy; EN, student engagement.
*$p < 0.05$, **$p < 0.01$.

TABLE 2 Descriptive statistics for male sample.

	MC	PC	SE	EN
MC	--			
PC	−0.09	--		
SE	0.46**	0.11	--	
EN	0.36**	0.06	0.60**	--
M	5.75	3.97	4.74	4.82
SD	1.02	1.30	1.38	1.11

MC, mastery classroom goal structure; PC, performance classroom goal structure; SE, self-efficacy; EN, student engagement.
*$p < 0.05$, **$p < 0.01$.

TABLE 3 Descriptive statistics for female sample.

	MC	PC	SE	EN
MC	--			
PC	−0.24**	--		
SE	0.19**	−0.09*	--	
EN	0.16**	−0.12*	0.45**	--
M	5.48	3.68	4.13	4.42
SD	0.90	1.11	1.05	0.92

MC, mastery classroom goal structure; PC, performance classroom goal structure; SE, self-efficacy; EN, student engagement.
*$p < 0.05$, **$p < 0.01$.

3.2 Measurement invariance

To explore if there were differences between male and female students in the interplay of the variables, tests for measurement invariance were conducted with full sample. First, the indices indicated good fit for the configural model: $\chi^2(716) = 1510.724$, $p < 0.001$, CFI = 0.913, RMSEA = 0.061 (90% CI [0.056, 0.065]), SRMR = 0.062. As the configural invariance was acceptable, the metric model was tested. The metric model also had an acceptable fit to the data: $\chi^2(741) = 1567.428$, $p < 0.001$, CFI = 0.910, RMSEA = 0.061 (90% CI [0.056, 0.065]), SRMR = 0.066. The difference between the metric model and the configural model was small, ΔCFI = 0.003, ΔRMSEA = 0, which indicates that constraining the factor loadings to be equivalent across gender did not significantly affect the model fit. In other words, the factor loadings were invariant across gender. Then the scalar model was tested by further constraining the intercepts to be equivalent across genders. However, the scalar model showed an unacceptable fit: $\chi^2(766) = 2446.139$, $p < 0.001$, CFI = 0.817, RMSEA = 0.085 (90% CI [0.081, 0.089]), SRMR = 0.078. Also, the difference between the metric model and the scalar model was large, ΔCFI = 0.093, ΔRMSEA = 0.024. Therefore, the interrelations among the study variables exhibited different structural patterns for male and female students.

3.3 Multi-group structural equation modeling

Since the measurement invariance indicated that there were significant differences in the two groups between metric and scalar

models, multi-group structural equation modeling (MGSEM; shown in Figures 1, 2) was used to test for differences between male and female students. The global fit of MGSEM indicated an acceptable fit to the data: χ^2 (716) = 1510.724, $p < 0.001$, CFI = 0.913, RMSEA = 0.061 (90% CI [0.056, 0.065]), SRMR = 0.062. The results showed that R^2 for male students' self-efficacy and engagement were 0.189 and 0.519 respectively, and R^2 for female students' self-efficacy and engagement were 0.269 and 0.029, respectively. Specifically, it indicated that 18.9% of the variance of male students' self-efficacy in English learning and 51.9% of the variance of male students' engagement were explained by the model. Additionally, 26.9% of the variance of female students' self-efficacy in English learning and 2.9% of the variance of female students' engagement were explained by the multi-group model.

The results of MGSEM indicated that mastery classroom goal structure had significant impact on students' self-efficacy for both genders (male students, $\beta = 0.43$, $p < 0.001$; female students, $\beta = 0.14$, $p = 0.02$). In other words, both male and female students showed higher self-efficacy when they perceived a more mastery-focused language learning environment. However, when it came to the role of mastery classroom goal structure in engagement, mastery classroom goal structure was positively related to engagement for male students ($\beta = 0.26$, $p = 0.002$), but unrelated for female students ($\beta = 0.08$, $p = 0.16$). Thus, male students' engagement in learning English might be facilitated when they are exposed to the classroom that aims to improve their language skills, but that is not the case for female students.

The MGSEM models showed that the paths from performance classroom goal structure to self-efficacy were not significant for either male ($\beta = 0.06$, $p = 0.49$) or female students ($\beta = -0.07$, $p = 0.27$), indicating that students' self-efficacy might not be influenced by the competitive classroom environment regardless of gender. However, the influences of performance classroom goal structure on engagement in the MGSEM models were not the same. It showed significant relationships for male ($\beta = 0.15$, $p = 0.045$) but not for female students ($\beta = -0.05$, $p = 0.41$), which suggested that the perceptions of performance-oriented classroom goal structure might increase male students' engagement in English learning, but not female students' engagement.

For the path from self-efficacy to engagement, the results showed that self-efficacy can predict engagement for both male ($\beta = 0.55$, $p < 0.001$) and female students ($\beta = 0.49$, $p < 0.001$). The findings revealed that if students had a higher self-efficacy, they might be more willing to engage in learning English. The results of bootstrapping revealed mastery classroom goal structures had significant indirect effects on student engagement in English language learning through self-efficacy across genders. In other words, when students were exposed in a class where the instructors aimed to improve their language skills, students might have a higher self-efficacy, which in turn would further boost their engagement. Particularly, the indirect effect of mastery classroom goal structures for male students was 0.18, $p = 0.021$ (95% CI [0.03, 0.34]). The indirect effect of mastery classroom goal structures for female students was 0.49, $p < 0.001$ (95% CI [0.23, 0.76]).

4 Discussion

The purpose of this study was to identify the relations among classroom goal structure, self-efficacy, and student engagement, as well as the role of gender on the associations among these variables, for a sample of college students studying English as a foreign language

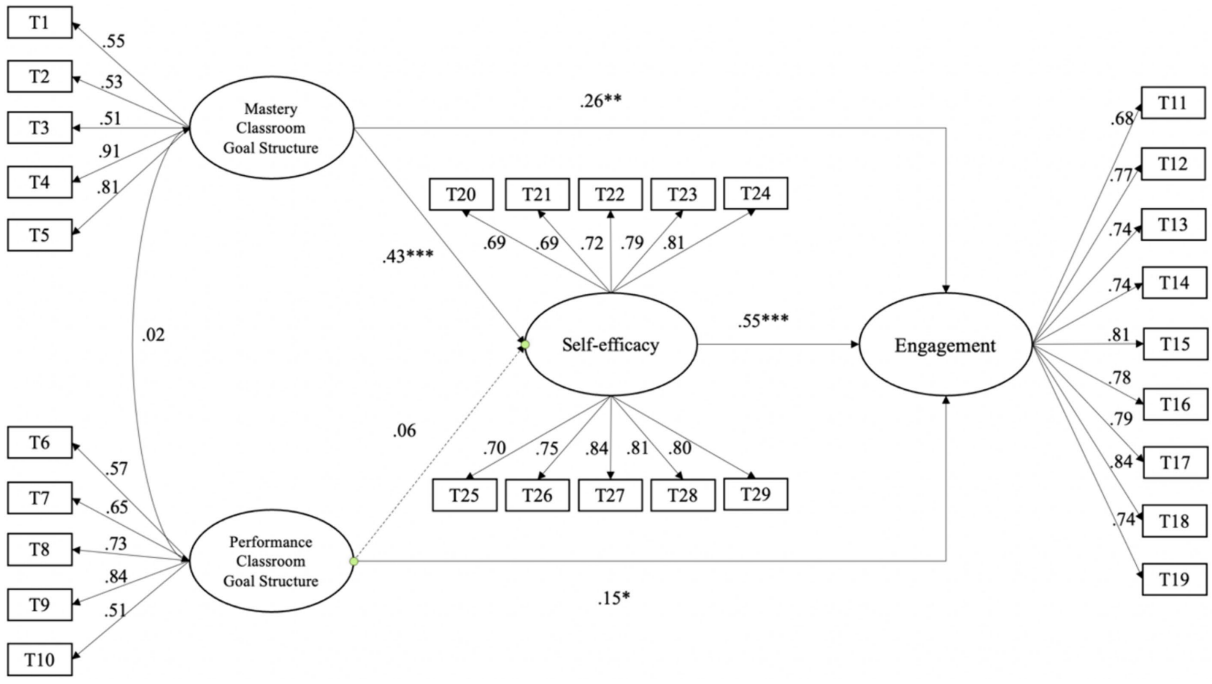

FIGURE 1
Multi-group structural equation modeling for male sample. Estimates are standardized. Standardized estimates are from a completely standardized solution. *$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

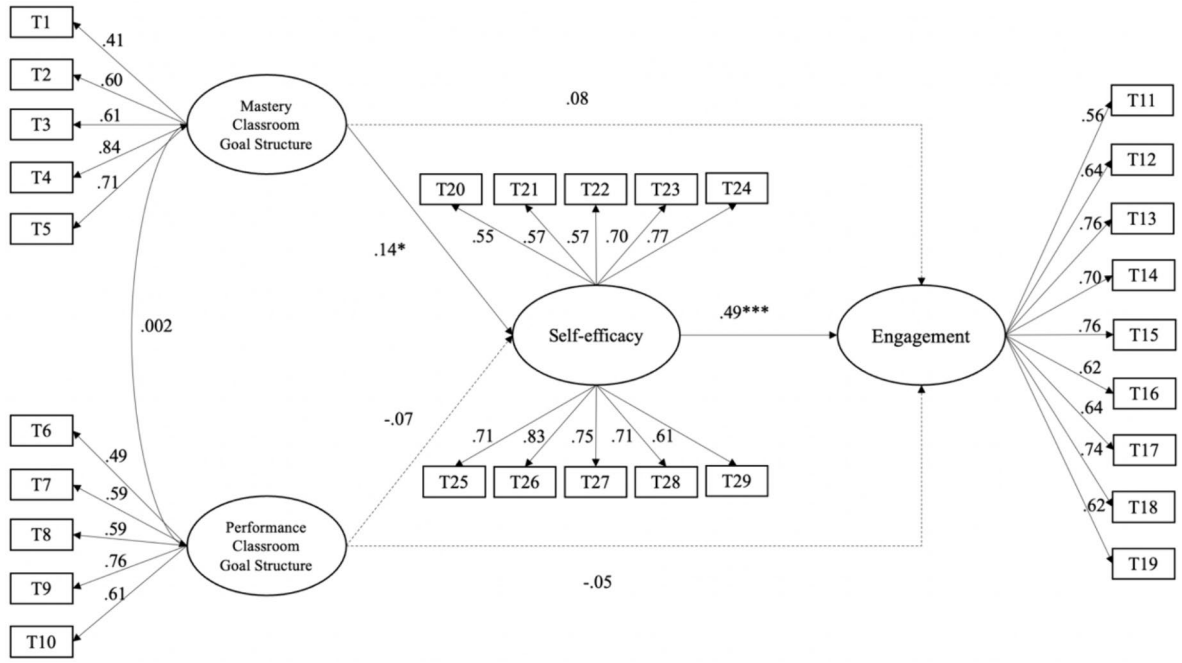

FIGURE 2
Multi-group structural equation modeling for female sample. Estimates are standardized. Standardized estimates are from a completely standardized solution. *$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

in China. In general, the findings indicated that mastery classroom goal structure had both direct and indirect impacts on student engagement for male students, but only the indirect effect existed for female students. Performance classroom goal structure related to student engagement for male students but not for female students. In addition, self-efficacy predicted student engagement and mediated the relation of mastery classroom goal structure to student engagement across genders.

It is worth noting that the participants reported higher mastery classroom goal structure than performance classroom goal structure; that is, overall students reported that their English classes and instructors tended to focus on the promotion of English language skills and highlight the role of diligence and effort, rather than encouraging them to demonstrate their competence or to compare their performance with others'. Such results were counter to previous studies, which indicated that classrooms in China were more performance-oriented (Shih, 2005). There might be several reasons for this discrepancy. First, the participants in the current study were college students who had already passed the national college entrance exam; focus on this exam may drive much of the performance orientation for K-12 students in China. Second, English language competence is a key practical skill for many jobs. Thus, mastering the language may be more important than outperforming others for college students who are concerned with future career success, not just academic performance.

The results of the MGSEM model showed that the relations among the three variables of interest varied across gender. First, mastery classroom goal structure positively predicted students' self-efficacy across genders, but it only had a direct effect on student engagement for men. However, performance classroom goal structure was not related to students' self-efficacy across genders, although performance classroom goal structure had a significant and positive direct effect on student engagement for men. This finding may be due, in part, to the view of assertiveness and dominance as desirable characteristics for men to possess (Li, 1998; Ho et al., 2020; Xu et al., 2022); men may thus be more engaged when classrooms provide the opportunity for these gender-role-consistent behaviors. These findings are also in accordance with some other research highlighting that classroom goal structure was more beneficial to male students' engagement than female students' (Linnenbrink-Garcia et al., 2008; Diseth and Samdal, 2015). The differential effects of performance classroom goal structures for men and women may be one possible explanation for the inconsistency in findings about the effects of performance goal structures in the existing literature.

Furthermore, the MGSEM model revealed that self-efficacy plays a substantial role in predicting student engagement for both male and female students. Such findings were in agreement with Bai et al.'s (2022) study on gender differences with regard to the relations between self-efficacy and engagement in foreign language learning, indicating that students' self-efficacy showed predictive power on their class engagement for both genders. The findings of the current study seem to reconfirm previous studies, suggesting that understanding and improving students' self-efficacy beliefs was a crucial aspect to promote language learning engagement for both male and female students (Ouweneel et al., 2013; Kim et al., 2015).

In terms of the indirect effects, the results of the MGSEM model showed that mastery classroom goal structure can facilitate students' engagement through promoting language self-efficacy across genders, but only had a direct effect on engagement for men. Such findings

implied that men's engagement can be promoted by both perceiving mastery classroom goal structure in the language class and language self-efficacy; whereas women's engagement was only directly influenced by their language self-efficacy.

Overall, the findings of MGSEM analyses indicated that classroom goal structure had more of an impact on men than women. However, this does not mean that classroom goal structure had no impact on women's engagement, since the results showed that mastery classroom goal structure can also facilitate women's engagement by improving their self-efficacy. Moreover, self-efficacy was also a crucial factor facilitating student engagement for all students, and both the findings of this study and others (Gorsuch, 2009; Moghari et al., 2011; Uçar and Sungur, 2017) show that aspects of the classroom environment can impact self-efficacy. It is also worth noting that the variables included in this study accounted for substantially more variance in student engagement for male students than for female students. This indicates that the variables included in this study did a better job of explaining what affects engagement for men than for women. In other words, compared to male students, classroom goal structure and self-efficacy might not be the most meaningful factors when considering how to engage female students. Other factors, such as learning goals beyond mastery and performance (e.g., social goals), beliefs and attitudes about language learning, emotional experiences in the classroom, or student-teacher relationship quality, might potentially have greater explanatory power for women.

4.1 Limitations

It is worth noting that the findings of the present study should be interpreted within certain limitations. First, the measurement of classroom goal structure included only mastery and performance goals. Recent approaches to examining motivation using achievement goal theory have used more complex frameworks of goals (e.g., mastery-approach, mastery-avoidance, performance-approach, performance-avoidance) and have included other types of goals (e.g., social goals) in examining student goals and classroom goal structures (Bardach et al., 2018, 2020; Gertsakis et al., 2021). Future studies can try to further explore the relations among these three variables by investigating the more complex role of classroom goal structure in foreign language learning. Second, while the sample of this study covers three universities in Northeast China, this sample only included English majors, which may limit the generalizability of the findings to all college students. Future research should attempt to recruit more participants whose majors are not English but who are learning English as a foreign language. Third, although the sample in the present study was consistent with the overall gender proportion of English majors in Chinese universities, the gender balance in the SEM modeling was skewed toward women. Studies with more balanced samples across gender should be conducted to verify the relations among these variables in the future.

4.2 Implications

In the current study, the findings indicated that student engagement in foreign language learning was predicted by classroom goal structure and students' language learning self-efficacy. The findings also showed that the effects of classroom goal structure and self-efficacy on student engagement in language learning varied across genders. Such findings add to a growing body of literature that speaks to the importance of environmental and individual factors to engagement for language learners (Yin, 2018; Zhang and Hyland, 2018; Khajavy, 2021; Sulis and Philp, 2021), which might have some implications for foreign language teaching.

First, the results of the current study support the significant role of mastery classroom goal structure in facilitating student English language learning engagement, suggesting that English teachers should create a classroom environment that underscores improving students' language skills and capabilities by encouraging them to spend more time and energy to work diligently and industriously. In addition to creating this kind of classroom environment, English teachers are encouraged to develop strategies and activities to improve students' optimistic beliefs in their capacities for successfully mastering the target language, which in turn promotes students' language learning engagement. Strategies such as the use of meaningful learning tasks and assessments, allowing for autonomy and choice, providing supportive feedback, and allowing for social interaction in the classroom can help instructors to create a mastery-oriented classroom environment (Lüftenegger et al., 2014).

Further, this study found diverse effects of performance classroom goal structure on student engagement across genders. Specifically, performance classroom goal structure had a positive effect on engagement for male students, but no effect for female students. This finding implies that English teachers should consider gender differences in students' learning beliefs and behaviors, and make a rational use of the different effects of different types of classroom goal structure accordingly. Even though, in most situations, English teachers should create a classroom climate that focuses on encouraging students to put in more effort to improve their English capacities, reasonable activities and tasks to promote benign competitions can also be beneficial to student engagement and language learning, especially for male students, without being detrimental for female students.

5 Conclusion

The current study examined the relationships among classroom goal structure, self-efficacy, student engagement, and gender among Chinese college students learning English as a foreign language. The results indicated that mastery classroom goal structure positively predicted students' self-efficacy, which in turn affected students' engagement across genders. However, mastery classroom goal structural had a direct effect on student engagement only for male students. Moreover, although performance classroom goal structure had no effect on self-efficacy for both genders, it had a significant effect on student engagement for male students. Self-efficacy always played a significant role in student engagement in the process of language learning regardless of gender. The findings of this study suggest that English teachers should strive to promote student self-efficacy, and that both mastery and performance goal structures can facilitate student engagement.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

This study was approved by the IRB at the University of Kansas. The study was conducted in accordance with local laws and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

HW: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Resources, Software, Writing – original draft, Writing – review & editing, Project administration, Validation. MP: Conceptualization, Investigation, Project administration, Supervision, Validation, Writing – original draft, Writing – review & editing. HL: Formal analysis, Methodology, Validation, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

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