Teacher support and learning engagement of EFL learners: The mediating role of self-efficacy and achievement goal orientation

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Abstract

Given the extremely preeminent role of students' learning engagement (LE) in their academic success, investigating the predictors of LE for EFL learners seems critical. Prior research has demonstrated that the external environmental factors (e.g., teacher support) and the internal motivational factors (e.g., self-efficacy, achievement goal orientation) were related to LE, yet the internal mechanism is still under-explored. Therefore, this study attempted to explore the associations between teacher support and LE and the possible underlying mechanism through which teacher support influences LE with individual motivational variables of self-efficacy and achievement goal orientation the mediators for EFL learners in China. A sample of 466 Chinese college EFL learners participated in the study. Results indicated that (1) both academic support and emotional support significantly predicted LE; (2) academic support predicted LE through the separate mediation of self-efficacy, mastery goals and performance-approach goals; whereas emotional support only predicted LE through mastery goals; (3) academic support, but not emotional support, predicted LE through the chain mediation of self-efficacy and mastery goals, self-efficacy and performance-approach goals. These results elucidated the mechanism of different teacher support on LE and provided some implications for promoting EFL learners' engagement.

Keywords Teacher support · Learning engagement · Self-efficacy · Achievement goal orientation · EFL learners

Introduction

Numerous research in education and psychology has concluded that students' LE is crucial for their academic success (Greene et al., 2004; Reeve & Lee, 2014; Yang et al., 2021). Students engaged more in their learning process are reported to be more resilient (Ellen et al., 2012); therefore, they are more likely to develop adaptive behaviors, which further leads to promising school-related outcomes. Additionally, prior studies have documented that LE is a prominent predictor of students' physical and psychological well-beings (Eccles, 2016; Jin & Wang, 2019). The prominent role of LE in students' overall and sustainable development has led to an emerging vein of research focusing on investigating factors affecting their LE, and the findings showed that LE is

greatly affected by the external environmental factors (Lam et al., 2012; Tas, 2016), and supportive school contexts (e.g., teacher support) are positively associated with student' LE (Granziera et al., 2022; Skaalvik & Skaalvik, 2013; Strati et al., 2017). Students perceiving more teachers' emotional and academic support are more inclined to persist faced with challenges, apply mastery strategies and expand great efforts to accomplish their goals, which leads to deeper engagement and improved academic achievements. Besides, the individual motivational variables (e.g., self-efficacy, achievement goal orientation) are also found to be associated with LE (Liu et al., 2017; Tas, 2016; Yang et al., 2021). Students who perceive high levels of self-efficacy tend to involve more in learning activities, and students who are either mastery or performance approach goal-oriented show active involvement in classroom activities, whereas those avoidance goal-oriented are inclined to avoid task and minimize effort (Meece et al., 1998). Thus, empirical evidence from previous studies has demonstrated that teacher support, self-efficacy, and achievement goal orientation are closely tied to LE. Yet the generalizability of findings abovementioned leads to necessity of a further research on LE in the EFL

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domain since quite few research has examined the predictors of LE for EFL learners (Oga-Baldwin, 2019; Philp & Duchesne, 2016). In fact, Chinese EFL learners have exerted great effort to learn English, yet generally their academic outcomes are not satisfactory (Chen, 2013; Xu & Fan, 2019). Therefore, investigating engagement issues, the predictive factors and underlying mechanism of LE for Chinese EFL learners is an extremely essential step for educators to intervene to optimize the teaching–learning process and promote students' academic achievement, which may shed light on LE of EFL learners in different context.

Literature review and hypotheses

Learning engagement

LE refers to individuals' active involvement during learning activities (Fredricks et al., 2004). It is generally conceptualized as a multidimensional construct comprising behavioral, emotional and cognitive engagement. Behavioral engagement includes students' active participation in learning tasks in terms of persistence, efforts and concentration (Lawson & Lawson, 2013); Emotional engagement consists of students' mental states in a learning activity in terms of interests, enthusiasm and enjoyment, their sense of school belonging, identification with schools and relatedness with teachers and peers (Lawson & Lawson, 2013); cognitive engagement refers to students' psychological involvement in learning activities such as their desires of investing in understanding and mastering skills, and students' cognitive process in completion a task such as how they adopt learning strategies to understand academic content (Lawson & Lawson, 2013). The engagement model of Reschly and Christenson (2012) illustrating the complex interrelationships between environment, engagement and outcomes posits that individuals' direct interaction with various degrees of support in the environment constitutes a proximal process, which is a primary driving force for their multi-layered development. This indicates that LE is influenced by both external environmental factors (e.g., teacher support) and internal individual factors (e.g., self-efficacy, achievement goal orientation) (Granziera et al., 2022; Skaalvik & Skaalvik, 2013; Tas, 2016; Yang et al., 2021). Applied to EFL classes, students are more likely to achieve language success when their individual attributes are more motivated by a supportive environment.

Self-determination theory (SDT) of learning engagement

SDT (Ryan & Deci, 2000) has been recognized as a widely accepted theoretical framework that was used for studying and explaining the complex interrelationships between environment, individuals' motivation and behaviors in different settings including education context (Azila-Gbettor & Abiemo, 2020). According to SDT, the degree of autonomy or control individuals experience in the environment determines their motivational behaviors. More specifically, individuals' experience of autonomy can lead to intrinsic motivation, thus promoting intrinsically-motivated behaviors and adaptive academic outcomes such as engagement since they involve in a learning activity for its own sake (e.g., enjoyment and interest inherent in activities), whereas their experience of control results in extrinsic motivation, thus facilitating extrinsically-motivated behaviors and maladaptive academic outcomes like disengagement since they engage in learning out of the external pressure and obligation (e.g., rewards, deadlines). However, individuals' motivational state is not invariant. It develops along a continuum from a less autonomous level to a more self-determined state, and different levels of self-determined states may result in different types of motivational orientation, which leads to different LE and academic outcomes (Oga-Baldwin et al., 2017; Wang et al., 2019).

Additionally, SDT posits that there are three different types of extrinsic motivation (external, introjected and identified regulation), and they can be internalized into intrinsic motivation which is the prototype of autonomy (Ryan & Deci, 2000, 2020). External regulation is asserted as the least autonomous form of extrinsic motivation since individuals' behaviors are carried out because of rewards, deadlines and punishment. When the external regulation is partially internalized by individuals as their own, external regulation transforms to introjected regulation, and individuals engage in activities out of self-worth and a feeling of guilt. Finally, when further internalized by individuals who identify the value of activities as their own, the introjected regulation turns into identified regulation, which is assumed as autonomous motivation even though it is extrinsic in nature. Therefore, intrinsic motivation and identified regulation are identified as autonomous motivation, while external regulation and introjected regulation are considered as controlled motivation.

Although motivation develops along a continuum from a less autonomous level to a more self-determined level and extrinsic motivation can be transformed into intrinsic motivation, the development of motivation is not seen as automatic, and levels of self-determined motivation depend on how students' basic psychological need for autonomy, relatedness and competence are satisfied by the environment (Ryan & Deci, 2000). The more these needs are meet in a supportive educational environment, the higher level of autonomous motivation learners possess, and the more positive motivational states such as high self-efficacy and adaptive achievement goals are adopted (Ryan & Deci,

2020), which are the antecedents of LE. Otherwise, thwarting these three needs undermines students' engagement. Therefore, teachers, as the most important support sources in school environments, play extremely prominent roles in satisfying students' psychological needs, thus shaping their motivational states and promoting their deep engagement in learning. These assertions have been empirically verified and well supported across a bulk of studies in different school levels and various educational contexts (Jiang & Zhang, 2021; Lau et al., 2008; Tas, 2016; Yang et al., 2016). For instance, grounded on SDT, Yang et al. (2021) taking Chinese primary and secondary school students as the sample found that emotional support from teachers can meet students' competence and relatedness needs, thus promoting their self-efficacy beliefs and behavioral engagement. Similarly, Jiang and Zhang (2021) who drew on the integrated perspective of SDT and Achievement Goal Theory, took Chinese university students as the sample and reported that teacher support can satisfy students' autonomy and relatedness needs, which facilities agentic engagement by influencing their mastery goals and performance-approach goals. Overall, LE is interrelated with motivation and considerably affected by teacher support, especially in EFL classes where engagement is the result of interactive communication between individuals and environment (Dincer et al., 2019; Sadoughi & Hejazi, 2021).

Teacher support and learning engagement

Teacher support is one of the most important environmental factors that affect LE in terms of school context. It is considered as students' perception that their teachers are concerned with them, consider their feelings and are willing to assist them when they have difficulties in their schoolwork (Fraser et al., 1996). In the field of EFL learning, frequent interaction between teachers and students are greatly needed, therefore, teachers, both as organizers and participants of classroom activities are believed to be a key factor for language learning (Richards, 1998). This is especially evident for the students in Chinese Confucian culture where teachers are traditionally viewed as authoritative experts (Huan et al., 2012), and the virtue of "A teacher for a day is a father for a lifetime" has been advocated in Chinese education system for many decades. Thus, teacher support plays a particularly pivotal part in enhancing students' motivation and engagement (Reeve, 2012; Skinner et al., 2008). As shown in previous research (Federici & Skaalvik, 2014; Ghaith, 2002; Liu et al., 2017), teacher support consists of autonomy, academic, emotional, instrumental and appraisal support, etc. However, researchers in different domains and regions are usually concerned about different forms of teacher support according to their research purposes and subjects. Based on past researches about Chinese teachers (Liang, 2017;

Liu et al., 2021; Yu, 2019), the present study is confined to assess teacher support with two dimensions, namely, teachers' academic support and emotional support. Academic support includes students' perception that their teachers are concerned about their English learning, and will provide tangible help in need (Ghaith, 2002); emotional support consists of teachers' care, trust, encouragement, respect and equality for students (Xiao et al., 2011). SDT suggests that teachers' academic support is conducive to the satisfaction of autonomy and competence needs so that students can cultivate a sense of ownership that drives them to take initiative in learning activities, which in turn promotes engagement (Gutiérrez & Tomás, 2019), and teachers' emotional support can meet students' need for relatedness, contributing to the build of harmonious teacher-student relationships, thus facilitating students' active involvement in classroom activities (Yang et al., 2021).

In addition to the above theoretical foundations, prior empirical research has confirmed the critical role of teachers' academic support and emotional support in promoting students' engagement and achievements in different learning context (Alrajeh & Shindel, 2020; Granziera et al., 2022; Huan et al., 2012; Jin & Wang, 2019; Liu et al., 2017; Strati et al., 2017; Xi, 2021; Yang et al., 2021). For example, Liu et al. (2017) asserted that teachers' academic support and emotional support have a direct influence on students' emotional, cognitive and behavioral engagement. Granziera et al. (2022) revealed that teachers' tangible help is positively correlated to students' academic buoyancy, thus enhancing their engagement in terms of persistence, sense of school belonging and effort. Additionally, Yang et al. (2021) demonstrated that teachers' emotional support directly predicts math behavioral engagement for Chinese primary and secondary school students. Another study by Alrajeh and Shindel (2020) confirmed that teachers' emotional support is positively and moderately correlated with students' engagement, and students are more engaged in math classes with the increase of emotional support from teachers. The similar results are also demonstrated in online learning environment. For instance, Xi (2021) found that each aspect of teachers' emotional support, namely, positive climate, teacher sensitivity and regard for adolescent perspective, positively predicts college students' high emotional engagement.

Additional scant research has also examined the association between teachers' academic support, emotional support and LE for EFL leaners. For example, Sadoughi and Hejazi (2021) took 435 Iranian EFL freshmen as the sample, explored the interrelationship between teacher support and learners' engagement from positive psychology, and they found that teacher support could directly and indirectly affect academic engagement via positive emotions like gratitude. Another study with 615 Chinese EFL freshmen the participants by Luan et al. (2020), revealed

that students who obtain more academic and emotional support from their teachers will exhibit more behavioral engagement in online English course, which further positively influences their emotional and cognitive engagement. Liu and Guo (2021) revealed that teacher support including emotional, instrumental, cognitive and interactive aspects is positively and directly predict Chinese EFL learners' online interaction engagement.

While ample evidence has been shown on the direct link between teacher support and students' LE in previous studies (Alrajeh & Shindel, 2020; Huan et al., 2012; Strati et al., 2017; Xi, 2021), three important limitations should be clarified. First, less attention has been paid to the underlying mechanism of how teacher support affect students' LE, especially when investigating how the external environmental factor, teacher support, affect LE through the individuals' motivational factors such as self-efficacy and achievement goal orientation. Thus, exploring the underlying mechanism is crucial for educators and teachers to optimize teaching methods to enhance students' engagement and achievements. Second, in the existing research examining associations between teacher support and students' LE, few has extended the setting to Chinese EFL classes (Oga-Baldwin, 2019). Therefore, there is a need to verify whether or not the relationship revealed in the above-mentioned math and science classes are also available in EFL class. Third, the two concepts, teachers' academic and emotional support, are constituted to a single construct (teacher support) in the majority of past researches to investigate the combined influence of teacher support including several components on LE (Alrajeh & Shindel, 2020; Liu et al., 2017; Strati et al., 2017), partly stemmed from the belief that both of them come from teachers and are present in the real classroom (Liu et al., 2017). Hence, it is hard to distinguish the predictive effect of each support on LE. Since the two concepts have been found to be distinct constructs (Johnson et al., 1983), it is necessary to examine the effect of each support on LE and the underlying mechanism. To address these gaps, this study drawing on the Self-determination Theory, posits a structural equation model and aims to investigate the associations between two types of teacher support and LE for Chinese EFL learners, and the underlying mechanism of how these two types of teacher support affect LE with self-efficacy and achievement goal orientation the mediators. Based on the previous research associating teachers' academic support, emotional support and LE, we propose:

Hypothesis 1: Teachers' academic support (H1a) and emotional support (H1b) positively predict Chinese EFL learners' engagement.

Mediation of self-efficacy

Students' motivation is highly correlated with their LE (Reeve, 2012) since motivation refers to the internal invisible drive and willingness to learn, whereas engagement indicates the external observable behaviors that stem from these drive and willingness (Eccles, 2016). Self-efficacy has long been assumed as a critical motivational construct that affects students' engagement (Linnenbrink & Pintrich, 2003). Conceptualized as individuals' perceptions of their abilities to plan and execute tasks (Bandura, 1977), self-efficacy plays a vital role in motivating one's behavior (Linnenbrink & Pintrich, 2003; Reeve, 2012). Specifically, individuals' judgement about their abilities to perform learning tasks in a specific domain greatly determines what type of motivation they possess and how they behave including how much effort they devote, how they react to obstacles and their thought patterns (Bandura, 1977). Prior studies have probed the associations between self-efficacy and individuals' adaptive behaviors like engagement, and the findings revealed that students with high self-efficacy beliefs tend to possess intrinsic motivation, exert greater effort, use effective learning strategies and involve in learning activities to reach a goal compared to those with lower self-efficacy beliefs (Linnenbrink & Pintrich, 2003; Ozkal, 2019; Sökmen, 2021). Conversely, the more students are involved in a learning activity, the better they will have an understanding of learning contents and the more excellent they will perform which further result in an increased self-efficacy beliefs (Linnenbrink & Pintrich, 2003). More importantly, prior studies have confirmed that self-efficacy positively predicts engagement, predicting some or all aspects of engagement (Ferrell, 2012; Liu & Zhen, 2021; Liu et al., 2021; Martin & Rimm-Kaufman, 2015). For instance, Martin and Rimm-Kaufman (2015) revealed that students with a higher level of math self-efficacy experience more social and emotional engagement, indicating self-efficacy is a prominent element in students' engagement. Ferrell (2012) demonstrated that self-efficacy positively predicts emotional, cognitive and behavioral engagement. Additionally, Liu et al. (2021) presented that highly-efficacious students are reported to have a stronger sense of confidence to take challenges, thus they participate activities more readily and exert greater efforts to obtain the goals.

While self-efficacy can directly enhance students' LE, a higher level of efficacy is not automatically transformed into stronger motivation and deeper engagement (Chong et al., 2018), especially in Chinese EFL classes where communicative language teaching has been strongly advocated to promote students' participation in meaningful interactions. Therefore, language teachers, as the organizers, participants, instructors and advisors in classroom activities undoubtably exert the most proximal influence in meeting

students' autonomy, relatedness and competence needs, thus developing their efficacy beliefs by creating a supporting learning environment. Specifically, Ryan and Deci's (2000) SDT claims that teachers' academic support directly targeted students' homework can satisfy their need for competence which shares similarities with self-efficacy (Liu et al., 2017), and an emotionally-supported teacher can satisfy students' need for relatedness, helping them develop a sense of school belonging and strengthen their feelings about active involvement in learning, which is conducive to the enhancement of self-efficacy beliefs (Jin & Wang, 2019; Yang et al., 2021). Similarly, when an English teacher offers the curriculum design based on students' current English proficiency and their Zone of Proximal Development (ZPD), their personal experience with success is more likely to be increased which is the most powerful source of self-efficacy (Bandura, 1977). In addition, the positive feedback and expectation provided by teachers equip the students with stronger beliefs that they can overcome a variety of difficulties in English learning. Taken together, we propose:

Hypothesis 2: Self-efficacy mediates the associations between teachers' academic support (H2a), emotional support (H2b) and Chinese EFL learners' engagement.

Mediation of achievement goal orientation

Another dominant and widely studied motivational variables that affects LE is achievement goal orientation, which is generally conceptualized as individual's pursuit of different goals in achievement settings (Pekrun et al., 2009). There are three types of commonly used achievement goals, namely, mastery, performance approach and performance avoidance goals, and the distinction between mastery goals and performance goals is made upon the underlying beliefs about the nature of competence. Students who are mastery goals-oriented hold the view of ability growth, believing that knowledge can be accumulated and competence can be enhanced through learning. Therefore, their behaviors of engagement are mainly intrinsically motivated and they learn for personal growth. Students who set performance goals hold the belief that competence is fixed and are mainly extrinsically motivated. Those who set performance-approach goals learn for proving that they are competent in learning by showing their abilities, and performance-avoidance students try to prove themselves by evading failure and negative judgements.

Prior studies have examined the influence of these three different goal orientations on LE and generally shown that mastery goals and performance-approach goals are adaptive goals and are positively related to LE, yet performance-avoidance goals are negatively related to LE (Greene et al., 2004; Lau et al., 2008; Tas, 2016). Specifically, students with mastery and performance-approach goals are more

engaged cognitively, emotionally and behaviorally in learning activities, while performance-avoidance goals are proved to be the most detrimental to engagement (Ryan & Deci, 2020; Shih, 2008). It is universally concluded that students with mastery goals prefer to use more effective cognitive and self-regulatory strategies including both deep-processing and surface-level strategies, while no relationships are found between the use of these strategies and performance-avoidance goals (Anderman & Patrick, 2012; Bong, 2009). Performance-approach goals are reported to predict the adoption of both deep and surface learning strategies in some studies (Bong, 2009) and only surface-level strategies in other studies (Meece et al., 1988; Guo & Leung, 2021). In addition, students with mastery goals tend to possess a positive emotion (e.g., hopefulness), intrinsic motivation and self-esteem, and are more likely to develop positive academic behaviors (e.g., seeking help, discussing school-related works), whereas those with performance-avoidance goals possess negative feeling like boredom and anxiety, and have maladaptive behaviors like avoiding seeking necessary help (Anderman & Patrick, 2012; Daniels et al., 2009). Like mastery goals, performance-approach goals are also deemed as appetitive goals related to positive emotions and promising academic outcomes (Hulleman et al., 2010; Tas, 2016; Thiis & Fleischmann, 2015), and the relevance between performance-approach goals and engagement depends on situations. For example, the relations between performance-approach goals and engagement (e.g., greater effort, self-regulatory strategies) are stronger in exam situations focusing on outperforming others and demonstrating competence (Putwain et al., 2018).

SDT maintains that whether environment encourages or discourages individuals' motivation and performance depends on the degree of satisfaction of individuals' three psychological needs (Ryan & Deci, 2000). Specifically, the more these three fundamental needs are meet in a supportive learning environment (e.g., teacher support), the more positive and self-determined motivational states (e.g., intrinsic motivation, the internalization of extrinsic motivation) are adopted, the more students tend to immerse in learning. Since intrinsic-extrinsic motivation distinction in the SDT seems to be parallel the difference between mastery and performance goals in the achievement goal orientation (Diseth & Samdal, 2014), it is reasonably assumed that different types of teacher support can result in distinct reasons of students' motivated behaviors, promoting either mastery or performance-approach goals, which further affect students' engagement (Jiang & Zhang, 2021). Empirically, a wealth of evidence has shown that teachers' emotional and academic support positively predict students' mastery and performance-approach goals while negatively predict their performance-avoidance goals. For example, Thiis and Fleischmann (2015) revealed that teachers' emotional

support exerts a distinctive effect on students' endorsement of mastery goals since they can emotionally comfort and support students confronted with stress, therefore, teachers are assumed to be secure figures for students to develop their natural inclinations of exploring learning environment, and these inclinations will present themselves in achievement situations in terms of approach tendencies, especially in terms of mastery goals. Added to this, a study undertaken by Diseth and Samdal (2014) drawing on SDT demonstrated that teachers' tangible help in learning can meet students' autonomy and relatedness needs, which is conducive to the adoption of both mastery goals and performance-approach goals. Another study by Yang et al. (2016) investigating the associations between Chinese primary students' perception of teachers' caring behavior and their goal orientations found that teachers' responsible, supportive and inclusive behaviors are positive predictors of students' mastery goals, yet are negative predictors of their performance-avoidance goals. Thus, the following hypotheses are proposed:

Hypothesis 3: mastery goals (H3a), performance-approach goals (H3b), performance-avoidance goals (H3c) mediate the associations between teachers' academic support and Chinese EFL learners' engagement.
Hypothesis 4: mastery goals (H4a), performance-approach goals (H4b), performance-avoidance goals (H4c) mediate the associations between teachers' emotional support and Chinese EFL learners' engagement.

The chain mediation of self-efficacy and achievement goal orientation

As aforementioned, both self-efficacy and achievement goal orientation appear to be mediators between two types of teacher support and LE. Additionally, an emerging body of research has revealed that self-efficacy has the direct proximal effect on goal orientation, which further affects achievement-related outcomes, more specifically, individuals who perceive their competence high will adopt mastery and performance-approach goals, whereas those who perceive their competence low are more likely to adopt avoidance goals (Elliot, 1999; Lau et al., 2008; Li & Xu, 2014). For example, Lau et al. (2008) maintained that students who have high self-efficacy beliefs hold the belief of ability growth and prefer to choose challenging tasks to improve their abilities. Elliot (1999) posited that self-efficacy orients individuals to success, therefore, it tends to inspire the approach tendency. This argument is endorsed by Bandura (1977) who holds that self-efficacy facilitates the formation of different forms of approach behavioral tendency. A study carried out by Lau et al. (2008) showed that students who are immersed in learning because of the self-belief that they have the capacity to accomplish their

academic goals are more likely to concern with ability-relevant thoughts, especially the thoughts that their abilities can be improved (mastery goals) or they can demonstrate abilities (performance-approach goals), whereas those with low self-efficacy tend to avoid be incompetent in front of schoolmates (performance-avoidance goals). Another study carried out by Li and Xu (2014) found that Chinese EFL learners' self-efficacy positively predicts mastery and approach goals in English learning, while it is negatively related to avoidance goals. Taken together, we hypothesize the following:

Hypothesis 5: Self-efficacy and mastery goals (H5a), performance-approach goals (H5b), performance-avoidance goals (H5c) respectively form chain mediators between teachers' academic support and Chinese EFL learners' engagement.
Hypothesis 6: Self-efficacy and mastery goals (H6a), performance-approach goals (H6b), performance-avoidance goals (H6c) respectively form chain mediators between teachers' emotional support and Chinese EFL learners' engagement.

The present study

In light of the abovementioned literature, this study attempted to investigate the associations between two types of teacher support and LE for Chinese EFL learners, and the mediating role of self-efficacy and achievement goal orientation (mastery goals, performance-approach goals, performance-avoidance goals). The hypothesized structural equation model was presented in Fig. 1:

Method

Participants

Participants were 466 undergraduate students enrolled in College English Course (CEC) from two comprehensive universities in south China. CEC is a compulsory course stipulated by China' Ministry of Education for the first- and second-year non-English major students. A total of 480 questionnaires were collected with 14 invalid questionnaires disregarded, and the valid questionnaires return rate was 97%. There were 212 males students (45.5%) and 254 female students (54.5%) majoring in sciences, humanities and social sciences. All of the participants were assured that their personal information was confidential to ensure questionnaires' validity.

Fig. 1 Hypothesized model.
Note: AS = academic support;
ES = emotional support
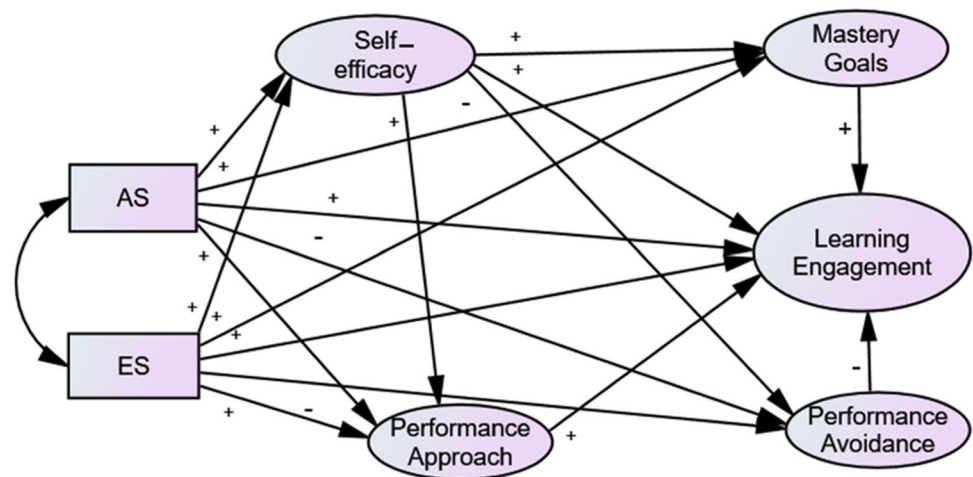
Instruments

The questionnaires included four scales: (a) Teacher support (TS), (b) Self-efficacy (SE), (c) Achievement goal orientation (AGO), (d) LE (LE). Simple Confirmatory Factor Analyses (SCFA) were performed by means of AMOS 23.0 to provide the validity of the measurement instruments, and observable variables with factor loadings less than 0.6 were excluded to yield meaningful measurements. The questionnaires assessed by a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree) were employed to elicit participants' response.

Teacher support

Students' perception of teacher support in English learning was measured with Teacher Support Scale. This scale was adopted and adapted from Xiao et al.'s (2011) Social Support Scale for College students (SSSCS) which includes a total of 10 items with two subscales, namely, academic support and emotional support. Xiao et al. (2011) developed SSSCS based on Gaith's (2002) Classroom Life Scale according to the current English learning status quo of Chinese college students. However, two items from each subscale were removed respectively because of lower factor loadings (lower than 0.6). Therefore, the adapted Teacher Support Scale consisted of two dimensions: (a) academic support (four items, e.g., "My teacher is willing to instruct me in English learning methods" and "My teacher is willing to ask me to answer questions or give opinions in class", Cronbach's alpha = 0.902); (b) emotional support (two items, e.g., "My teacher respects my feelings, for example, when I don't know how to answer questions, the teacher won't embarrass me or laugh at me" and "My teacher treats me and every other student fairly and equally", Cronbach's alpha = 0.876). CFA was conducted for the whole scale, and the results exhibited a satisfactory construct

validity (chi-square/*df* = 4.182, GFI = 0.976, AGFI = 0.936, CFI = 0.988, RMSEA = 0.083, SRMR = 0.024). Therefore, the scale is valid for measuring college student-perceived support from their English teachers in China.

Self-efficacy

Students' confidence about their ability in English learning was measured with Self-efficacy Scale. This scale was adopted and adapted from self-efficacy part (a unidimensional scale with 10 items) in Pinch and De Groot's (1990) Motivated Strategies for Learning Questionnaire (MSLQ). However, four items were removed because of the lower factor loadings (lower than 0.6) after SCFA was conducted, and the final adapted Self-efficacy Scale included six items (e.g., "I am certain I can master the skills in English learning taught in class" and "I am confident I can solve all kinds of difficulties in Learning English", Cronbach's alpha = 0.941). CFA was conducted for the scale, and the results exhibited satisfactory construct validity (chi-square/*df* = 3.684, GFI = 0.975, AGFI = 0.941, CFI = 0.990, RMSEA = 0.076, SRMR = 0.016).

Achievement goal orientation

Students' achievement goal orientation in English learning for Chinese EFL learners was measured with Achievement Goal Orientation Scale. This scale was adopted and adapted from Elliot and Church's (1997) Achievement Goal Questionnaire which comprises a total of 14 items with three subscales. However, one item from mastery goals, and two items from performance-approach and avoidance goals were respectively excluded due to lower factor loadings (lower than 0.6). The adapted Achievement Goal Orientation Scale included three subscales, namely: (a) mastery goals (four items, e.g., "I hope I can learn as much as possible in English class", Cronbach's alpha = 0.694); (b) performance-approach

goals (three items, e.g., "it's very important for me to perform better than other students in class", Cronbach's alpha = 0.797); (c) performance-avoidance goals (two items, e.g., "I often worry about getting lower grades than other students in class", Cronbach's alpha = 0.766). CFA provided acceptable results for the three-subscale model (chi-square/df = 1.866, GFI = 0.979, AGFI = 0.960, CFI = 0.983, RMSEA = 0.043, SRMR = 0.036), indicating the satisfactory construct validity.

Learning engagement

Students' engagement in English learning for Chinese EFL learners was measured with the 14-item LE Scale. This scale was adopted and adapted from Lam et al.'s (2012) Classroom LE Scale which includes 17 items with three subscales (behavioral, emotional and cognitive engagement). Whereas one item in each subscale was removed respectively because of lower factor loadings (lower than 0.6). The adapted LE Scale comprised three subscales, namely: (a) behavioral engagement (four items, e.g., "I am always actively involved in group activities and classroom discussions", Cronbach's alpha = 0.905); (b) emotional engagement (four items, e.g., "I'm very interested in the English class", Cronbach's alpha = 0.905); (c) cognitive engagement (five items, e.g., "I can understand and absorb different knowledge in English learning", Cronbach's alpha = 0.939). CFA presented satisfactory fit of induces (chi-square/df = 3.192, GFI = 0.941, AGFI = 0.914, CFI = 0.976, RMSEA = 0.069, SRMR = 0.032).

Data analysis

In this study, SPSS 23.0 and AMOS 23.0 were employed for data analysis which proceeded in three phases. First, to explore the relationship among teacher support, self-efficacy, achievement goal orientation and LE, statistical analysis was conducted with SPSS 23.0 to measure means, standard deviations and Pearson correlation for the variables. Second, to test the fitness of measurement model, a multigroup CFA

was conducted with AMOS 23.0 to find out the goodness of fit to the data. Finally, SEM and specifically bootstrap method were performed with AMOS 23.0 to find out the predicators of LE, and mediators between self-efficacy and LE.

Results

Descriptive statistics and correlation analysis

As shown in Table 1, participants perceived more emotional support (M = 4.188, SD = 0.777) than academic support (M = 3.968, SD = 0.757). They were also more inclined to develop mastery goals (M = 3.765, SD = 0.719) and performance-approach goals (M = 3.446, SD = 0.770) than performance-avoidance goals (M = 2.898, SD = 0.849). In addition, the participants reported high levels of self-efficacy (M = 3.641, SD = 0.773) and LE (LE) (M = 3.822, SD = 0.695) in their English learning. As expected, all of the variables were positively and significantly interrelated (0.388 < rs < 0.760, $p < 0.01$) except PAVG, which was negatively and weakly correlated with other variables (-0.263 < rs < -0.182, $p < 0.01$). The correlations showed that the association between self-efficacy and LE (r = 0.760, $p < 0.01$) was strongest in the relationships among all the latent variables, and the relation between mastery goals、performance-approach goals and LE (r = 0.638, $p < 0.01$; r = 0.682, $p < 0.01$) were moderately correlated, indicating that self-efficacy, mastery goals and performance-approach goals are possibly to be mediators..

Structural equations modeling analysis

We applied Structural Equations Modeling (SEM) using AMOS 23.0 to investigate the fit of the hypothesized model. The model showed an acceptable goodness of fit to the date (χ^2 = 331.93, df = 136, χ^2/df = 2.441 < 5.0, GFI = 0.929 > 0.90, AGFI = 0.901 > 0.90, CFI = 0.968 > 0.90, RMSEA = 0.056 < 0.08, SRMR = 0.033 < 0.08), indicating

Table 1 Means, standard deviations and correlations for all variables

Variable	M	SD	AS	ES	SE	MG	PAPG	PAVG	LE
AS	3.968	.757	1						
ES	4.188	.777	.735**	1					
SE	3.641	.773	.517**	.423**	1				
MG	3.765	.719	.505**	.445**	.637**	1			
PAPG	3.446	.770	.484**	.388**	.553**	.408**	1		
PAVG	2.898	.849	−.198**	−.207**	−.263**	−.182**	−.200**	1	
LE	3.822	.695	.680**	.564**	.760**	.638**	.682**	−.289**	1

ES emotional support, *AS* academic support, *SE* self-efficacy, *PAVG* performance-avoidance goals, *PAPG* performance-approach goals, *MG* mastery goals, *LE* learning engagement. ** $p < .01$

the outcome model reasonably represented the structural relationship among the variables demonstrated in Fig. 2 below.

Table 2 showed the standardized path coefficients of the hypothesized model, indicating most paths were statistically significant in Fig. 2. Specifically, academic support positively predicted LE ($\beta = 0.22$, $p < 0.001$)、self-efficacy ($\beta = 0.46$, $p < 0.001$)、mastery goals ($\beta = 0.15$, $p < 0.05$) and performance-approach goals ($\beta = 0.26$, $p < 0.001$); emotional support is a positive predictor of mastery goals ($\beta = 0.12$, $p < 0.05$). Moreover, self-efficacy positively predicted LE($\beta = 0.27$, $p < 0.001$)、performance-approach goals ($\beta = 0.48$, $p < 0.001$) and mastery goals ($\beta = 0.61$, $p < 0.001$), but negatively predicted performance-avoidance goals ($\beta = -0.23$, $p < 0.001$). In addition, mastery goals and performance-approach goals positively predicted LE ($\beta = 0.20$, $p < 0.001$; $\beta = 0.36$, $p < 0.001$)), whereas performance-avoidance goals negatively predicted LE ($\beta = -0.07$, $p = < 0.05$). There were five insignificant paths which were the paths form emotional support to self-efficacy ($\beta = 0.09$, $p = 0.15$)、emotional support to LE ($\beta = 0.06$, $p = 0.08$)、emotional support to performance-approach goals ($\beta = 0.04$, $p = 0.57$)、emotional support to performance-avoidance goals ($\beta = -0.13$, $p = 0.08$) and academic support

Table 2 Standardized path coefficients

Path			Estimate	S.E	P
AS	→	LE	.216	.033	***
	→	SE	.462	.059	***
	→	MG	.145	.055	.015
	→	PAPG	.259	.054	***
SE	→	LE	.272	.042	***
	→	MG	.607	.053	***
	→	PAPG	.478	.049	***
	→	PAVG	−.230	.074	***
ES	→	MG	.124	.050	.027
MG	→	LE	.196	.042	***
PAPG	→	LE	.362	.045	***
PAVG	→	LE	−.068	.020	.020
AS	→	PAVG	−.015	.090	.846
ES	→	LE	.064	.029	.084
	→	SE	.087	.056	.148
	→	PAPG	.035	.048	.569
	→	PAVG	-.125	.081	.084

AS academic support, *ES* emotional support, *SE* self-efficacy, *PAPG* performance-approach goals, *PAVG* performance-avoidance goals, *MG* mastery goals, *LE* learning engagement. ***$P < .001$
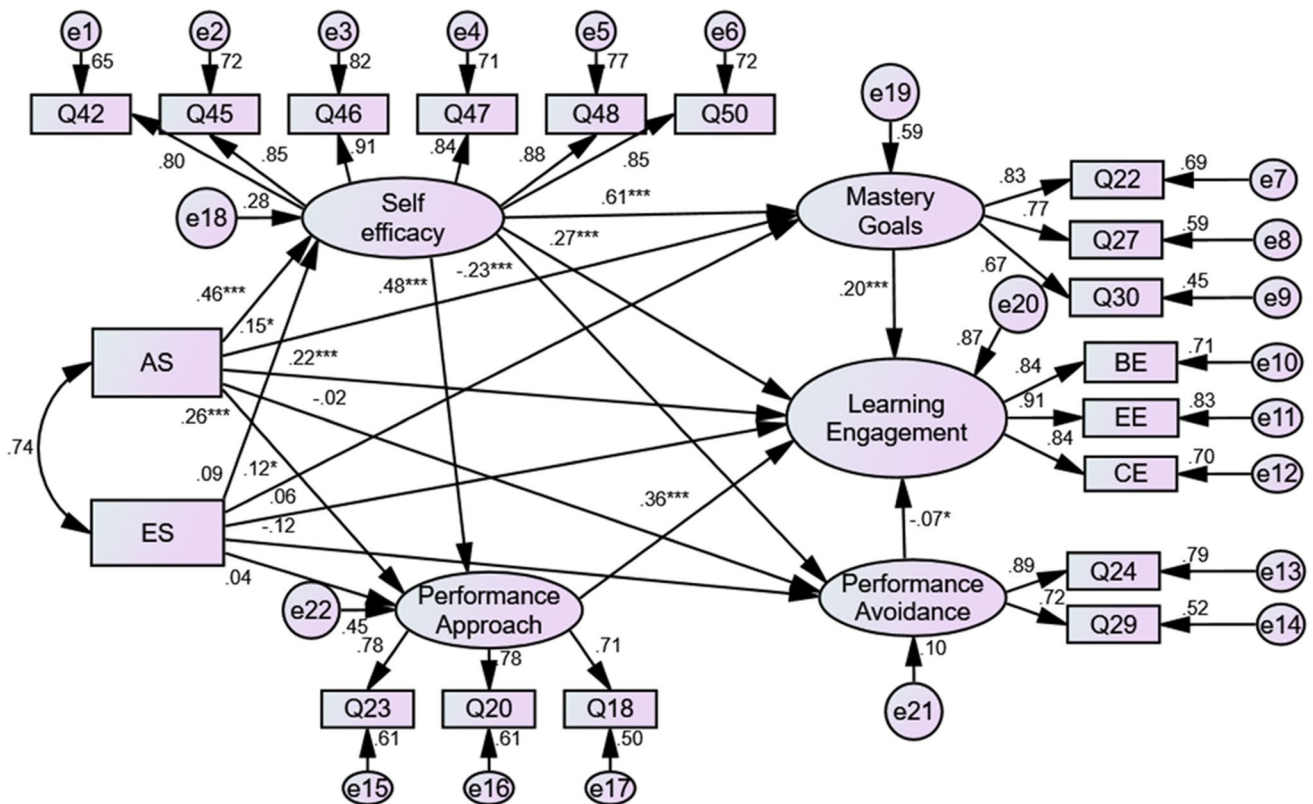

Fig. 2 The outcome of the hypothesized model. *Note:* ES = emotional support; AS = academic support; BE = behavioral engagement; EE = emotional engagement; CE = cognitive engagement. * $p < .05$; *** $p < .001$

to performance-avoidance goals (β = –0.02, p = 0.85). Overall, the paths from academic support to most variables were significant, while the path from emotional support to most variables turned out to be insignificant in the present study.

Mediation effect of motivational variables

When testing the mediation effect of motivational variables (self-efficacy, achievement goal orientation), the bootstrap method instead of Soble test (1986) was used since the bootstrap method is more appropriate for examining the mediation effect (MacKinnon et al., 2004). With 5000 bootstrap resamples, bias-Corrected 95% confidence interval with zero excluded indicated the mediation effect is significant.

Table 3 showed academic support could indirectly influence LE through five pathways: academic support → self-efficacy → LE (β = 0.10, p < 0.001)、academic support → mastery goals → LE (β = 0.02, p < 0.05)、academic support → performance-approach goals → LE (β = 0.08, p < 0.001)、academic support → self-efficacy → mastery goals → LE (β = 0.04, p < 0.001) and academic support → self-efficacy → performance-approach goals → LE (β = 0.06, p < 0.001). Moreover, Table 2 showed the direct path between academic support and LE was significant, indicating academic support could not only predict LE directly, but predicted LE via the mediation of self-efficacy、mastery goals and performance-approach goals respectively. It was also found that the two pathways, self-efficacy and mastery goals, self-efficacy and performance-approach goals separately acted as chain mediators between academic support and LE. Notably, the mediation effect exerted by the path via self-efficacy was the strongest among the five paths, demonstrating the importance of cultivating self-efficacy beliefs in the influences of teachers' academic support on students' engagement in English learning. Emotional support is an indirect predictor of LE via the mediation of mastery goals (β = 0.02, p < 0.05), and the direct path between emotional and LE was found to be insignificant reported in Table 2, indicating emotional support failed to predict LE

directly, but it could exert indirect and significant effect on LE through mastery goals.

Discussion

This study attempted to explore the associations between the external environmental factors in terms of two types of teacher support (academic support, emotional support) and LE of Chinese EFL learners. Specifically, the mediation of internal motivational variables, namely, self-efficacy and achievement goal orientation (mastery goals, approach-performance goals, approach-avoidance goals) between two types of teacher support and LE was examined. The findings indicated that (a) both teachers' academic support and emotional support positively predicted EFL learners' engagement; (b) academic support predicted LE through the separate mediating role of self-efficacy, mastery goals and performance-approach goals; whereas emotional support only predicted LE through mastery goals; (c) academic support, but not emotional support, predicted LE through the chain mediation of self-efficacy and mastery goals, self-efficacy and performance-approach goals.

The findings revealed that teachers' academic support and emotional support were positive predictors of EFL learners' engagement. Hypothesis H1a and H1b were supported. More specifically, academic support was both a direct and indirect predictor to LE, but emotional support only indirectly predicted LE. This finding showed the positive influence of teacher support on students' LE in English study, which confirms the arguments in previous research (Dincer et al., 2019; Sadoughi & Hejazi, 2021; Xiao et al., 2011) on the significance of teacher support in students' LE and the preeminent role of environmental factors in fostering students' adaptive learning behaviors. That is, students perceiving more support from their language teachers experience deeper emotional, cognitive and behavioral engagement in EFL learning. In addition, this finding can be elaborated by the assumption of SDT (Ryan & Deci, 2000) that students

Table 3 Mediation effect

Path	Estimate	SE	Bootstrapping			
			Bias-corrected 95%CI		Percentile 95%CI	
			Lower	Upper	Lower	Upper
AS-SE-MG-LE	.044	.016	.020	.086	.018	.082
AS-SE-PAPG-LE	.063	.014	.041	.097	.040	.094
ES-MG-LE	.019	.011	.002	.049	.000	.044
AS-SE-LE	.100	.028	.053	.162	.050	.158
AS-MG-LE	.023	.015	.002	.061	.001	.057
AS-PAPG-LE	.075	.023	.036	.126	.033	.123

AS academic support, *ES* emotional support, *SE* self-efficacy, *PAPG* performance-approach goals, *MG* mastery goals, *LE* learning engagement

perceiving more teacher support enjoy more intrinsic and higher autonomous self-motivation (Liu et al., 2021), which stimulates their interests in learning itself, thus dedicating more effort, persistence and enthusiasm to learning activities. Moreover, teacher support can help students develop their sense of school belonging and relatedness in classroom, reduce their undesirable and disruptive behaviors (Patrick et al., 2007), pay considerable attention to tasks, and correspondingly engage more in their learning process. Overall, teachers can involve EFL learners in engagement to the maximum extent by providing different forms of support.

Academic support, not emotional support, was directly related to self-efficacy, and the mediating effect of self-efficacy was significant in the link between academic support and LE, while it was nonsignificant in the link between emotional support and LE. That is, the positive contribution of teacher support to LE through self-efficacy can be explained in the light of academic support. Hypothesis H2a was supported. The result indicated that academic support is easier to enhance self-efficacy, which plays a vital role in promoting EFL learners' engagement. It corresponds to Ruzek et al.'s (2016) results that self-efficacy beliefs would be more easily affected by instructionally-supported interaction with students rather than emotionally-supported teacher-student interactions. Meanwhile, it supports SDT (Ryan & Deci, 2000) indicating that teachers' academic support directly targeting students' homework can satisfy their need for competence, which facilitates the enhancement of their self-efficacy beliefs. In addition, the mediation path of self-efficacy in this study also parallels the arguments in Schunk and Mullen's research (2012), that is, teachers play the most proximal role in shaping students' self-efficacy beliefs by providing instructional support to reinforce students' goals for learning or adjusting their instructional strategies to help them obtain goals. Therefore, it can be inferred that individuals' self-efficacy beliefs may be hard to change since direct evidence of academic progress are needed to demonstrate that one is more competent than before, which is consistent with Ruzek et al.'s (2016) conclusion. Notably, the mediating effect of self-efficacy is the strongest in the association between teachers' academic support and LE, suggesting the significant value of self-efficacy in successful language acquisition. Specifically, students who perceive more available care and help from their teachers in the process of English learning demonstrate more confidence in performing the task successfully, therefore, they will emotionally show stronger interest, cognitively use more deep-processing strategies, and behaviorally participate more actively in English learning.

Mastery goals and performance-approach goals were separately recognized as significant mediators between teachers' academic support and LE, while performance-avoidance goals were not significant mediators. Hypothesis H3a and H3b were supported. This result indicated that teachers' academic support directly and effectively shapes students' mastery goals and performance-approach goals, two positive motivational states significantly related to the three components of engagement. This result empirically supports the findings of previous research (Meece et al., 2006; Michou et al., 2013) on the critical value of teachers in shaping students' achievement goals. That is, students' endorsement of motivation in achievement situations is influenced by teachers' instructional practices and creation of goal structures in classroom. Specifically, teachers' instructional and evaluation strategies which focus on skill development, competence improvement and understanding are assumed to promote the adoption of mastery goals, and those emphasizing competition for scores and comparison of abilities are more inclined to facilitate performance-approach goals. Additionally, the result corresponds to SDT that fulfillment of individuals' needs for competence, autonomy and relatedness provided by environment can flourish their positive autonomous motivation. Consequently, teachers' academic support, as one crucial source of social support for students in school, has been considered the most effective way to meet students' three psychological needs, and thus contributing to autonomous motivation and engagement in learning for EFL learners. Notably, the mediating effect of performance-approach goals ($\beta = 0.08$) were four times stronger than that of mastery goals ($\beta = 0.02$). This finding suggests that students who perceive teachers' tangible help when they have problems in English learning are more likely to demonstrate their abilities and prove that they are competent in English learning. Thus, they are more likely to be engaged in learning process. Tow possible reasons can account for this phenomenon. First, teachers' tangible help is always accompanied by high levels of self-efficacy, thereby students perceiving teacher support will believe that they are competent in learning. Therefore, they will try to prove that they are more capable than their classmates and pursue performance-approach goals (Lau et al., 2008). This is particularly revealed in the educational environment which emphasizes on examination in Asian countries like China. Competence is typically associated with score ranking, and students are generally nurtured towards extrinsic motivation-oriented, and they are taught form young to be "number one" in the class and outperform other students. Therefore, the desire to do well and exceed others academically is fiercer in these cultures where families and schools exert substantial critical influence on students' motivation and behaviors. This indicates that teachers provide scaffolding in promoting students' confidence in their own abilities, which in turn naturally facilitates their performance-approach goals. Second, students in China have a natural tendency to be grateful for "important others" like parents and teachers, and outperforming classmates is one of the commonly-adopted ways

to reward "important others" (Jin & Wang, 2019). Thus, students are easily to be performance-approach goal-oriented. Overall, teachers' academic support perceived by students brings substantial influence in promoting students' mastery goals and performance-approach goals, and thus promoting their engagement in English learning.

Teachers' emotional support indirectly predicted LE only by influencing mastery goals, suggesting emotional support directly builds students' mastery goals which further promotes their engagement. Hypothesis H4a was supported. This result is in line with earlier findings revealed by several prior researches. For instance, Thijs and Fleischmann' (2015) found that emotional support plays a positive role in fostering teacher-student relationship and students' goal orientations. More specifically, Teachers' equity and respect to students creates a positive teacher-student relationship which can be functioned as "secure base". Therefore, students are confident to follow their natural tendency to explore the learning environment and freely interact with it in this "secure base", since they know their teachers can help and protect them if they need. Consequently, this kind of exploration inclination will present itself in approach inclination in the achievement motivation situation framework, and especially in the pursuit of mastery (Elliot & Reis, 2003). This also echoes SDT' claims that an emotionally-supported teacher can satisfy students' need for relatedness, contributing to establishing a harmonious teacher-student relationship, which is conducive to the enhancement of self-efficacy beliefs. Additionally, it accords the study by Skaalvik and Skaalvik (2013) who demonstrated that students' mastery goals are strongly associated with their perception of the teacher as emotionally-supportive, which further influences their intrinsic motivation. Therefore, teachers have a unique impact on students' endorsement of mastery goals through their emotional support, which is considered the contextual antecedents of LE.

A notable contribution of this study was that self-efficacy positively predicted mastery goals and performance-approach goals, but negatively predicted performance-avoidance goals. Furthermore, the Bootstrap method revealed that academic support significantly predicted LE via the two chain mediations respectively: self-efficacy and mastery goals, and self-efficacy and performance-approach goals, indicating self-efficacy had a proximal effect on EFL learners' achievement goals. Hypothesis H5a and H5b were supported. This finding demonstrated that students with higher self-efficacy were more possibly to endorse the goal of mastering the skills and knowledge taught in English class, would aim to outperform their classmates when they were confident in their English ability, and would be less likely to avoid English tasks. This finding accords with Lau et al.'s (2008) results about the relationship between individuals' self-efficacy and their goal orientations. That is, students' confident in their competence

are inclined to be success-oriented and pursue mastery and performance-approach goals, yet students perceiving their competence low are inclined to be failure-oriented and pursue performance-avoidance goals. It also confirms Elliot's (1999) hierarchical model of achievement motivation in which self-efficacy directly affect achievement goals, which further predicts achievement-related outcomes. Since for one thing, students with high efficacy are primarily concerned about ability growth, skills development and knowledge expansion, therefore, they are mastery-goal oriented which promotes their investment in learning; for another, they try to prove their ability and protect their ego by outperforming their classmates and looking more competent than others, thus, they will adopt performance-approach goals which facilitates their engagement in learning.

Another related finding worth specifying is that self-efficacy and achievement goal orientation failed to form a chain mediation between emotional support and LE mainly since emotional support didn't have a significant influence on self-efficacy. This result accords Ruzek et al.'s (2016) finding, in which self-efficacy is more affected by teachers' instructional interactions with students rather than emotional interactions. However, other studies (Sakiz et al., 2012; Yang et al., 2021) investigating the link between teachers' emotional support and self-efficacy have shown that teachers' emotionally-supportive instruction can enhance students' self-efficacy and is positively correlated with students' self-report of confidence in their abilities, and can enhance their self-efficacy beliefs. Several possible explanations may account for the inconsistent results in different research. First, the present study didn't control the influence of academic support when investigating the associations between emotional support and self-efficacy. Emotional support may influence self-efficacy through affecting academic support. Second, different from the participants of primary or middle school students in the previous research, the participants in this study are college students who are physically and mentally more mature. They possess the courage to encounter difficulties and capability to solve problems in the learning process. Thus, they don't need the emotional support of teachers as much as primary school students do. Consequently, the predictive effect of teachers' emotional support on self-efficacy may be reduced. Finally, the participants in this study are in real large-size classroom which is a typical feature of Chinese EFL class. Therefore, it' hard for teachers to provide emotional support to most students and the effect of teachers' emotional support may be weakened.

Strengths, limitations and future directions

This study makes three important theoretical contributions to the literature by addressing research gaps neglected in the previous studies. First, despite extensive studies on

associations between teacher support and LE in non-English disciplinary areas such as math and science field (Alrajeh & Shindel, 2020; Huan et al., 2012; Tas, 2016), few has extended the context to Chinese EFL classes (Oga-Baldwin, 2019). The findings of this study provide support for associations between teacher support and LE in EFL classes, expanding our knowledge of the positive effect of teachers' role on LE to EFL context. Moreover, the findings echo to Sinatra et al.'s (2015) appeal to more empirical studies on domain specificity of engagement. Second, empirical findings of the hypothesized interrelationships, guided by the theoretical framework of SDT (Ryan & Deci, 2000, 2020), elucidate the underlying mechanism of how external environmental factors, teacher support, affect EFL learners' LE via the mediation of internal motivational factors: self-efficacy and achievement goal orientation, which has rarely been explored in EFL context. This study reveals that teacher support can facilitate students' LE by improving their self-efficacy and cultivating their mastery and performance-approach goals. Additionally, the present findings support SDT and contribute to the generalizability of SDT to EFL setting. Finally, unlike the majority of prior research examining the combined effect of teacher support including several components on LE (Guo & Leung, 2021; Sadoughi & Hejazi, 2021), our study explored the different mediation paths of two distinct teacher support on LE, emphasizing extremely crucial roles of self-efficacy and achievement goal orientation in English study. The findings present that teachers' academic support and emotional support don't predict LE equally, which can be a notable contribution to the sparse literatures on the influence of two types of teacher support on engagement in EFL context.

The present findings provide far-reaching practical implications for researchers and educators striving to promote students' engagement in language settings. First, since both teachers' academic support and emotional support were proved to significantly enhance LE for EFL learners, it is suggested that EFL teachers provide a wide range of support such as academic, emotional, feedback, autonomy and instrumental support, etc. to maximize students' engagement in language learning. For instance, it is recommended that teachers equally provide students with constructive guidance in meaningful and prompting activities, and they should also be knowledgeable about the type of feedback they offer, trying to provide accurate feedback about students' performance, which is conducive to learning compared to inaccurate feedback (Soffer & Cohen, 2019). Moreover, teachers should create a caring learning environment and sound teacher-student relationship by showing their great concern and genuine interest in students' learning (Tas, 2016). Second, given the important role of self-efficacy and achievement goal orientation in the associations between teachers' academic support, emotional support and LE, attempts to raise EFL learners' self-efficacy levels

and promote their adaptive goal orientations should be taken by teachers. For example, teachers can boost students' self-efficacy by designing reasonably challenging tasks according to students' ZPD to help them experience success. Similarly, positive feedback and expectation offered by teachers equip students with stronger beliefs that they can overcome various difficulties in learning. Besides, classroom goal structures created by teachers focusing on students' ability growth and skill development by acknowledging their efforts and emphasizing that making mistakes is just a part of successful learning, make them more mastery-oriented (Ames, 1992; Meece et al., 2006; Thiis & Fleischmann, 2015). Finally, the different mediation paths of two kinds of teacher support on LE imply the importance of different intervention methods to students with different attributes. For instance, it is suggested that teachers provide students who adopt performance-approach goals more academic support rather than emotional support since the direct path between emotional support and performance-approach goals is nonsignificant. That is, teacher' care, respect and warmth alone can hardly convince students that they have the capacities to outperform others (Ruzek et al., 2016). Aside, teachers should take it into consideration that the intervention effects depend on whether merely one indirect path is intervened or all the direct paths are intervened.

Several limitations in this study should be addressed. First, we only examined the one-way influence of two types of teacher support on students' LE. Do students engaging more in English study receive more support from their teachers? Future studies will explore the possible reciprocal associations between teacher support and LE for EFL learners by longitudinal research. Second, the present study focused on Chinese EFL college students from one developed province in South China. Thus, the results in this research may not be generalized to other populations. Teacher' academic support and emotional support possibly have greater influence on students' motivational variables both in primary and middle schools, so future studies is suggested to focus on students in different grades and regions to obtain more supportive findings. Third, this study used self-reported questionnaires which have constraints in reflecting the true response measured in the instruments. It is recommended that multi-method model such as observations, interviews and teacher report are used to provide a more accurate understanding about the associations between teacher support and LE as well as the underlying mechanism through which teacher support exerts influence on LE for EFL learners.

Conclusion

To date, this is the first research that examined the underlying mechanism of teacher support in terms of academic support and emotional support on Chinese EFL learners'

engagement by comprising self-efficacy and achievement goal orientation as the mediators. The findings underline the positive roles of teachers' academic support and emotional support for enhancing EFL learners' engagement in English learning, which accords Sadoughi and Hejazi's (2021) prediction. It also supports Ryan and Deci (2000) claims on the complicated interrelationships between environment, individuals' motivation and behaviors. Additionally, it highlights the crucial role of two kinds of teacher support on students' self-efficacy, performance-approach and performance-avoidance goals, which further promotes students' engagement in English learning. It should be noted that our findings on the mechanism of different teacher support on LE provide some implications for promoting EFL learners' engagement.

Data availability The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declarations

Ethical approval All procedures performed in studies involving human participants followed the institutional and/or national research committee's ethical standards and the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent We obtained informed consent from all individual participants included in the study.

Conflict of interest The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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