# How burnout, resilience, and engagement interplay among EFL learners: A mixed-methods investigation in the Chinese senior high school context

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**ABSTRACT:** English-as-a-foreign-language (EFL) learning is essential for Chinese senior high school students, but burnout can impair their engagement and performance. Resilience, however, can enhance their engagement and shield them from burnout. This mixed-methods study aimed to investigate the interplay between burnout, resilience, and engagement among 413 Chinese senior high school EFL learners. Using AMOS 24, quantitative analyses with structural equation modeling (SEM) revealed the reciprocity between these three constructs. Specifically, burnout was negatively associated with both resilience and engagement, explaining 28.6% and 33.3% of their shared variance respectively. Besides, resilience and engagement were positively correlated, sharing 70.6% of their variance. Qualitative semi-structured interviews with 15 students, analyzed by MAXQDA 2022, supported this reciprocity by specifying the role of each component of these constructs. This study also discusses the theoretical and practical implications of findings and suggests directions for future research.
**Keywords:** EFL learning, burnout, resilience, engagement, Chinese senior high school students

**Cómo se relacionan el agotamiento, la resiliencia y el compromiso entre los estudiantes de inglés como lengua extranjera: una investigación de métodos mixtos en el contexto de la escuela secundaria superior china**

**RESUMEN:** El aprendizaje del inglés como lengua extranjera (EFL) es esencial para los estudiantes chinos de secundaria, pero el agotamiento puede afectar su participación y rendimiento. Sin embargo, la resiliencia puede mejorar su participación y protegerlos del ago-

tamiento. Este estudio de métodos mixtos tuvo como objetivo investigar la interacción entre el agotamiento, la resiliencia y la participación entre 414 estudiantes chinos de secundaria que aprenden EFL. Utilizando AMOS 24, los análisis cuantitativos con el modelado de ecuaciones estructurales (SEM) revelaron la reciprocidad entre estas tres construcciones. Específicamente, el agotamiento se asoció tanto negativamente con la resiliencia como con la participación, explicando el 28,6% y el 33,3% de su varianza compartida respectivamente. Además, la resiliencia y la participación se correlacionaron positivamente, compartiendo el 70,6% de su varianza. Las entrevistas cualitativas semiestructuradas con 15 estudiantes, analizadas por MAXQDA 2022, respaldaron esta reciprocidad al especificar el papel de cada componente de estas construcciones. Este estudio también discute las implicaciones teóricas y prácticas de los hallazgos y sugiere direcciones para futuras investigaciones.

**Palabras clave:** aprendizaje de inglés como lengua extranjera (EFL), agotamiento, resiliencia, compromiso, estudiantes chinos de secundaria superior

## 1. INTRODUCTION

Positive psychology (PP) is a concept that emphasizes the strengths and well-being of individuals, and it has gained prominence in the 21st century, particularly in language education (Derakhshan, 2022; Wang et al., 2021). PP is based on three pillars: positive institutions, positive characteristics, and positive emotions. In the context of English as a foreign language (EFL) learning, PP has shed light on the importance of positive characteristics such as resilience and engagement, which have been shown to have various benefits for EFL learners (Derakhshan et al., 2023; Wang et al., 2021). Resilience refers to the ability of individuals to cope positively with stressful and challenging situations (Pinkney & Walker, 2020), whereas engagement denotes a positive, fulfilling, and study-related state of mind (Derakhshan, Doliński, et al., 2022; Derakhshan, Fathi, et al., 2022). On the other hand, PP does not dismiss negative characteristics, but, rather, aims to achieve a balance between positive and negative emotions and experiences. As a result, burnout, a mental disorder caused by persistent stress from academic demands, has also emerged as a key issue in the field of EFL learning supported by PP (Li et al., 2021).

Previous empirical studies have demonstrated that resilience and engagement are beneficial for EFL performance, as they are positively associated with learners' psychological factors such as motivation, self-efficacy, and grit, etc. (Derakhshan & Fathi, 2023; Kim & Kim, 2021). Conversely, burnout is detrimental to EFL performance, as it is negatively connected with these factors (Karimi & Fallah, 2021). These three constructs have been explained in terms of the conservation of resources (COR) theory, a major theory in the field of PP (Hobfoll, 2012). This theory suggests that burnout is caused by resource losses, while engagement is derived from resource gains. It also emphasizes resilience as a key personal resource to cope with resource changes. Based on this theory, this study makes a case that there is a reciprocal relationship among these three constructs in the EFL learning context.

Although numerous previous studies have investigated burnout, resilience, and engagement in the EFL learning context, they have not examined potential interactions between these constructs and mainly focused on teachers (Derakhshan et al., 2022; Wang, Derakhshan, & Azari Noughabi, 2022; Wang, Derakhshan, & Rahimpour, 2022). However, these constructs are also relevant in the case of students, as their learning activities could be considered as

"work". Besides, the interplay among these constructs may be especially salient for Chinese senior high school EFL students, because they have to take English as a mandatory subject in Gaokao (National College Entrance Examination). Gaokao is generally regarded as a fate-shaping test and an important way to achieve socio-economic mobility in China. With such high educational expectations, Chinese senior high school students are vulnerable to burnout and require more resilience and engagement in their EFL learning (Teuber et al., 2021).

This mixed-methods study explored the possible bidirectional relationships between burnout, resilience, and engagement in the EFL learning context, considering the research gap and their significant impact on EFL performance. The participants were Chinese senior high school students, a population that has been largely overlooked in previous research. To examine the complexity and dynamics of these variables, this study adopted a novel analytical method that combined structural equation modeling (SEM) and qualitative content analysis. By doing so, this study aimed to offer a comprehensive and nuanced insight into the psychological factors that influence EFL learning outcomes and the well-being of this specific population.

## 2. Literature review

### 2.1. Burnout in the EFL context

Burnout is coined as a term to describe a psychological syndrome that involves prolonged exposure to chronic interpersonal stressors on the job that often results in three core components: emotional exhaustion, cynicism, and inefficacy (Schaufeli et al., 2009). Burnout has been extensively researched among teachers (Ghasemi, 2023; Xing, 2022). However, students are also prone to burnout in their learning activities, such as attending classes, completing assignments, and taking exams (Hu & Schaufeli, 2009; Wang & Guan, 2020). These activities can be considered as students' "work", which entails various sources of stress (Salanova et al., 2010). Burnout in education may vary from one subject to another, as students may have different levels of interest, motivation, and confidence in different subjects. Learning a foreign language can also pose linguistic, cultural, and psychological challenges to students, which may result in intense burnout.

Recently, researchers have started to explore EFL learners' burnout by investigating how it interacts with internal and external factors in EFL learners' learning language. On the one hand, it was found that social support in class reduces EFL students' burnout, and academic buoyancy affected their relationship differently by class level (Fu, 2023). Teacher affective support could also mitigate burnout, both directly and indirectly through intrinsic motivation and shame (Karimi & Fallah, 2021; Pan et al., 2023). On the other hand, a personal trait like self-oriented learning perfectionism was found to indirectly and negatively affect EFL students' burnout through learning anxiety and grit (Liu et al., 2021; Pan, 2022). However, to our best knowledge, the associations between burnout and other psychological factors such as resilience and engagement are still understudied among EFL students. Thus, drawing on the COR theory (Hobfoll, 2012), we endeavor to examine their relationships in Chinese senior high school EFL contexts.

## 2.2. Resilience in the EFL context

Resilience is defined as the ability of individuals to adapt positively to stressful and challenging situations. These situations may include high-demanding assignments, negative relationships with peers and teachers, and family pressure. According to Folkman's (1984) stress and coping theory (SCT), resilience depends on whether individuals appraise their personal, cognitive, and situational resources as adequate to deal with the stressors. Based on the SCT, there are three main types of resilience: ego resilience, cognitive resilience, and social resilience. Resilience is a vital quality for students, as it enhances motivation, self-regulation, problem-solving skills, and academic success (Pinkney & Walker, 2020). It also facilitates career success and psychological well-being by promoting adaptability, flexibility, and innovation as well as alleviating stress, anxiety, and depression (Mishra & McDonald, 2017).

Resilience has attracted attention from language researchers, as learners often encounter difficulties that require years of persistent effort. However, only a few studies on EFL learners' resilience have been conducted. For example, Kim et al. (2019) found that resilience was composed of five factors: metacognitive adaptation, sociability, optimism, perseverance, and communicative efficacy. They also showed that it could affect EFL proficiency through demotivation. In their recent study, Kim and Kim (2021) further divided resilience factors into self-composure, sociability, life satisfaction, communicative efficacy, and realistic optimism. Similarly, Zhang (2022) also investigated the link between resilience and motivation among EFL learners, revealing that these two constructs could influence each other. The extant studies on EFL students' resilience have mainly probed its connections with motivation, leaving other pivotal factors like burnout and engagement unaddressed, which justifies our exploration.

## 2.3. Engagement in the EFL context

Although the concept of work engagement was originally developed to describe the activities of employees in organizational settings, it has also been applied to the activities of students in educational settings, being referred to as academic engagement (Schaufeli et al., 2002). The rationale for this application is that, as mentioned above, the activities of students can be regarded as "work" in the sense that they are goal-directed, structured, and compulsory. Therefore, academic engagement can be defined as a positive, fulfilling, study-related state of mind that comprises vigor, dedication, and absorption (Schaufeli, 2017). Engagement is a crucial factor for academic success and well-being (Salanova et al., 2010), so that it has been regarded as "the holy grail of learning" (Sinatra et al., 2015).

Engagement is a burgeoning and evolving area of research in the EFL learning context, which has investigated its precursors and outcomes. Previous studies have identified various factors that influence EFL learners' engagement, such as self-efficacy, grit (Derakhshan & Fathi, 2023; Pan, 2022), teacher enthusiasm, emotions encompassing enjoyment, anxiety, and boredom (Dewaele & Li, 2021; Wang, 2023), teachers' affective scaffolding, and well-being (Pan et al., 2023; Zhi & Wang, 2023). Moreover, researchers have also demonstrated the positive impact of engagement on learners' EFL performance (Feng & Hong, 2022; Guo et

al., 2022; Guo et al., 2023) and attendance in English courses (Dincer et al., 2019). Nevertheless, there is a paucity of research that examines how engagement interacts with EFL students' burnout and resilience, which is the main aim of our study.

## 2.4. Links between the three constructs

Engagement and burnout are two related but distinct constructs that affect students' academic outcomes and well-being. Although they are negatively correlated, they are not conceptually opposite, as some studies have found the coexistence of high engagement and high burnout in various occupations (Abós et al., 2019; Schaufeli et al., 2002). The empirical literature has examined the bidirectional relationships between burnout and engagement in various contexts, but not in the field of EFL learning, where only one theoretical study has discussed the possible negative effect of burnout on engagement among EFL teachers (Xing, 2022). Therefore, more empirical studies are needed to verify the associations between EFL burnout and EFL engagement among both teacher and student groups.

Resilience is another important factor that influences engagement and burnout. Resilience has multiple benefits for students, such as higher academic performance, more protection from maladjustment, and more engagement in the school context (Romano et al., 2021). Resilience can also mitigate the adverse effects of burnout. However, resilience can also be affected by burnout in both work and educational settings (Gelaw et al., 2023; Yu & Chae, 2020). Moreover, a longitudinal study found a reciprocal relationship between resilience and burnout (Wang, Sun et al., 2022). Surprisingly, in the field of EFL learning, the relationship among these three constructs is far from well-established, with only a few recent studies that have explored their possible interaction, and have been generally limited to EFL teachers (Ding et al., 2023; Hu & Wang, 2023; Wang et al., 2022; Wang & Derakhshan, 2023; Xie, 2021).

## 2.5. The COR theory as a rationale

The COR theory was used as our theoretical framework, as it explains how individuals cope with stress and challenges in their lives (Hobfoll, 2012). According to this theory, individuals have various valuable resources available to them. Individuals try to protect and increase their resources, and avoid or recover from resource losses. Resource losses can cause negative emotions, which can result in burnout. Conversely, resource gains can elicit positive emotions, which can lead to engagement. Burnout and engagement are conceptualized as two distinct but highly correlated constructs (Schaufeli et al., 2002). Resilience is a vital personal resource that refers to the ability to adapt to stress and challenges by using coping strategies. It helps reduce the negative impact of resource losses and enhance the positive impact of resource gain. Resilience also helps acquire more resources to increase engagement, which in turn can increase resilience. However, when individuals fail to handle resource losses, the subsequent burnout is bound to exacerbate resource losses and erode resilience. According to the COR theory, burnout, resilience, and engagement are three interrelated constructs that form a feedback loop. This feedback loop provides the theoretical rationale for our proposed model (see Figure 1).
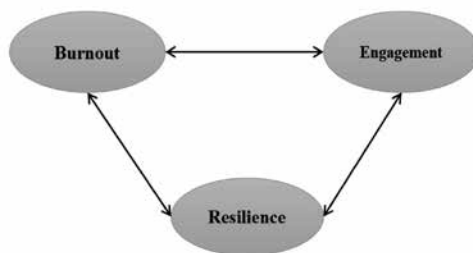
**Figure 1.** *The proposed model of burnout, resilience, and engagement*

## 3. RESEARCH QUESTIONS

Based on the literature review, no study has examined the interplay of burnout, resilience, and engagement in the Chinese senior high school EFL learning context. Besides, there is evidence that these constructs may have a reciprocal relationship. Considering the salience of these constructs for Chinese senior high school students who face high-stake English exams, we formulated the following research question:

RQ: What are the relationships among burnout, resilience and engagement among Chinese senior high school EFL learners?

## 4. METHODOLOGY

### 4.1. Research design

This study employed a mixed-methods approach to seek the answer to our research question. It followed an explanatory sequential design, which involved collecting and analyzing quantitative data first, and then using qualitative data to enrich the quantitative findings (Creswell, 2014).

### 4.2. Participants

The initial sample of this study consisted of 452 senior high school students from 11 schools in Zhejiang and Shanxi provinces in China. However, 39 students (8.63%) were excluded from the analysis due to incomplete or invalid responses to the questionnaire. Therefore, the final sample comprised 413 students, with 158 (38.26%) in Grade 10, 103 (24.94%) in Grade 11, and 152 (36.80%) in Grade 12. The gender distribution was 161 males (39.0%) and 252 females (61.0%). The age range was 15 to 19 years old ($M$ = 17.08; $SD$ = 1.31). For the qualitative phase of the study, we conducted semi-structured interviews with 15 students (7 males and 8 females). Table 1 shows the demographic information of the interviewees.

**Table 1.** *Demographic information of interviewees*

| Student | School | Gender | Age | Grade |
|---------|--------|--------|-----|-------|
| S1 | A | Male | 18 | 12 |
| S2 | B | Female | 18 | 12 |
| S3 | C | Male | 17 | 11 |
| S4 | D | Female | 16 | 10 |
| S5 | E | Female | 18 | 12 |
| S6 | G | Female | 18 | 12 |
| S7 | F | Male | 17 | 11 |
| S8 | G | Male | 18 | 12 |
| S9 | G | Female | 17 | 11 |
| S10 | H | Female | 15 | 10 |
| S11 | I | Male | 17 | 11 |
| S12 | J | Female | 18 | 12 |
| S13 | B | Male | 16 | 10 |
| S14 | E | Male | 17 | 11 |
| S15 | C | Female | 18 | 12 |

## 4.3. Measures

### 4.3.1. Burnout

The Maslach Burnout Inventory-EFL Student Survey by Li et al. (2021) was employed to assess the students' EFL burnout. This instrument is comprised of three subscales: exhaustion (4 items; example item: "I feel burned out from my English studies."), cynicism (3 items; example item: "I have become less enthusiastic about my English studies."), and reduced efficacy (3 items; example item: "I don't feel stimulated when I reach my goals in English study."). The total scores range from 10 to 50, with higher scores indicating higher burnout levels. The participants rated each item on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The overall reliability of the scale was 0.95 in this study.

### 4.3.2. Resilience

The Foreign Language Learning Resilience Scale (FLLRS) for Chinese students was adopted to measure the students' EFL resilience. The FLLRS was developed by Guo and Li (2022) and consists of three subscales: ego resilience (4 items; example item: "I am curious about the new knowledge when I study a foreign language."), metacognitive resilience (7 items; example item: "I would change my plans for language learning."), and social resilience (8 items; example item: "To well solve problems in foreign learning, I would try to make foreign friends if time permits."). The participants responded to each item on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Higher scores indicate higher resilience levels. The overall reliability of the scale was 0.97 in this study.

### 4.3.3. Engagement

The Utrecht Work Engagement Scale for Students (UWES–9S) by Carmona-Halty et al. (2019) was used to measure the students' EFL engagement. The scale was translated into Chinese. Two professors in translation were invited to rate the language quality of the items on a 10-point scale. They revised the items with scores below 6 until they reached consensus. The UWES–9S has 9 items that reflect three aspects of student engagement (3 items, respectively): vigor (example item: "When I get up in the morning, I feel like going to English class."), dedication (example item: "I am enthusiastic about my English studies."), and absorption (example item: "I am proud of my English studies."). All items were rated on a 6-point Likert scale from 1 (*strongly disagree*) to 6 (*strongly agree*). They were tailored to the EFL learning context. For instance, one item was "I feel energetic and capable when I'm studying English or going to English class". The overall scale had a reliability of 0.97 in this study.

### 4.3.4. Semi-structured interview

We conducted semi-structured interviews with 15 senior high school students who had participated in our questionnaire survey. The interview questions were developed based on a pilot test with two students and reviewed by the first and corresponding authors for language and structure. Each interview lasted approximately 30 minutes. The interview questions were as follows:

1: Have you ever been burned out/resilient/engaged in your EFL learning?
2: What factors do you think (both positive and negative ones) make you more or less burned out/resilient/engaged?
3: Have you ever taken measures to mitigate your burnout/enhance your resilience/ engagement? If so, what are they? Please describe them in more detail.

### 4.4. Data collection

Purposive sampling was used in this study. The researchers contacted EFL teachers from various senior high schools in China and obtained quantitative data from 413 students through a paper-and-pencil questionnaire survey. The students' custodians were given informed consent that details the procedure, confidentiality, and anonymity. For the qualitative data, the researchers randomly selected 15 students to conduct online semi-structured interviews in Chinese through Tecent Meeting so that they were able to express their ideas clearly. Before the formal interview, the basic concepts of burnout, resilience, and engagement were elucidated.

### 4.5. Data analysis

To analyze the quantitative data, structural equation modeling (SEM), confirmatory factor analysis, and regression analysis were performed using AMOS 24 to test a model

of relationships between burnout, resilience, and engagement in the EFL learning context. Moreover, to verify the proposed model among the constructs, we estimated different good-ness-of-ft indices. The interviews were transcribed into 8,071 English words (13,916 Chinese characters) for qualitative analysis. MAXQDA 2020 was employed to analyze the data using a deductive-inductive approach, which integrated the interview questions and the themes emerging from the data (Patton, 2002). The second author coded the data to examine: (a) students' EFL burnout/resilience/engagement, and (b) their interactions. Using the dimensions of the constructs and the items of the scales, we devised the coding scheme (see Table 2). The disagreement on coding was settled by further discussion.

**Table 1.** *Demographic information of interviewees*

| Codes | Sub-codes | Example |
|---|---|---|
| Burnout | E-exha | e.g., unable to, overwhelmed, self-doubt… |
| | Cynicism | e.g., negative attitude, hate, disgusting… |
| | R-efficacy | e.g., lose confidence, lack accomplishment, terrible grade… |
| Resilience | ER | e.g., able to, I can make it, never surrender… |
| | CR/MR | e.g., use learning strategies/ method, regulate… |
| | SR | e.g., ask help from parents/ teachers/ classmates/ friends… |
| Engagement | Vigor | e.g., energetic, work harder, more effort… |
| | Dedication | e.g., inspired, interested, enthusiastic, pride… |
| | Absorption | e.g., absorbed, dedicated, devoted… |

*Note*: E-Exha, Emotional exhaustion; R-efficacy, Reduced-efficacy; ER, ego resilience; CR, cognitive resilience; MR, metacognitive resilience; SR, social resilience

## 5. QUANTITATIVE RESULTS

### 5.1. Confirmatory factor analysis

This study performed confirmatory factor analysis (CFA) to ensure construct validity. The initial model consisted of three second-order constructs: resilience, burnout, and en-gagement. Each construct had several components, making the model a second-order one. The model was tested for non-significant or low factor loadings using both unstandardized and standardized estimates. No items were removed or modified as all factor loadings were significant and above 0.45. Figure 2 illustrates the CFA model.
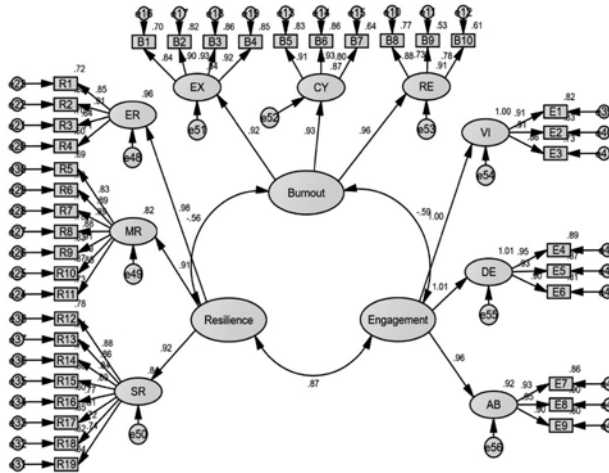
**Figure 2.** *The CFA model with standardized estimates*
*(ER, ego resilience; CR, cognitive resilience; SR, social resilience; EX, exclusion; cy, cynicism; RE, reduced-efficacy; VI, vigor; DE, dedication; AB, absorption)*

## 5.2. Checking the model-to-data fit

The model's goodness of fit was tested using the criteria suggested by Hu and Bentler (1999). The criteria and the corresponding values from the data are shown in Table 3. The results indicate that the model fits the data well.

**Table 3.** *Evaluation of the CFA goodness of fit*

| Criteria | | Cutoff | | | Evaluation |
|---|---|---|---|---|---|
| | | Terrible | Acceptable | Excellent | |
| CMIN/DF | 3.333 | > 5 | > 3 | > 1 | Acceptable |
| RMSEA | 0.075 | > 0.08 | < 0.08 | < 0.06 | Acceptable |
| CFI | 0.917 | < 0.9 | > 0.9 | > 0.95 | Acceptable |
| TLI | 0.912 | < 0.9 | > 0.9 | > 0.95 | Acceptable |
| SRMR | 0.047 | > 0.1 | > 0.08 | < 0.08 | Excellent |

Table 4 presents the discriminant validity and composite reliability (CR) of each factor in the model. All factors have CR values above 0.7, indicating acceptable reliability (Plonsky & Oswald, 2014). Moreover, all factors have average variance explained (AVE) values above 0.5 and maximum shared variance (MSV) values below their AVE, which support the convergent validity of the model. The Fornell-Larcker criterion reveals that all factors are significantly correlated with each other, with the high correlations between resilience and engagement ($r = 0.866$), burnout and engagement ($r = -0.593$), and burnout and resilience

($r$ = -0.556). The square root of AVE for each factor (the bold values in the table) is higher than its inter-correlations with other factors, confirming the discriminant validity of the model (Fornell & Larcker, 1981).

**Table 4.** *Convergent and discriminant validity*

|  | CR | AVE | MSV | Fornell - Larcker Criterion | | |
|---|---|---|---|---|---|---|
|  |  |  |  | Burnout | Resilience | Engagement |
| Burnout | 0.955 | 0.876 | 0.351 | **0.936** |  |  |
| Resilience | 0.953 | 0.871 | 0.750 | -0.556*** | **0.933** |  |
| Engagement | 0.993 | 0.978 | 0.750 | -0.593*** | 0.866*** | **0.989** |

*Note*: Correlation is significant at $p < 0.001$

### 5.3. Checking reciprocal predictability

After verifying the convergent and discriminant validity of the CFA model, we used the data in the model for further analysis. We did not apply any statistical methods to optimize the data to preserve its authenticity. Table 5 presents the descriptive statistics of the data. It shows that the data meet the assumptions of the SEM, as the scores are normally distributed. The skewness and kurtosis values are below the absolute value of 2 for all factors.

**Table 5.** *Descriptive statistics of the scores (N = 413)*

|  | Min | Max | *M* | *SD* | Skewness | SE | Kurtosis | SE |
|---|---|---|---|---|---|---|---|---|
| Burnout | 1.00 | 5.00 | 2.575 | 1.003 | 1.029 | 0.120 | -0.224 | 0.240 |
| Resilience | 1.00 | 7.00 | 4.431 | 1.378 | 1.895 | 0.120 | 0.266 | 0.240 |
| Engagement | 1.00 | 6.00 | 3.638 | 1.319 | 1.760 | 0.120 | -0.262 | 0.240 |

We then conducted a regression analysis with SEM to investigate the reciprocal predictability between burnout, resilience, and engagement, which is our research question. Figure 3 shows the structural model for this analysis.
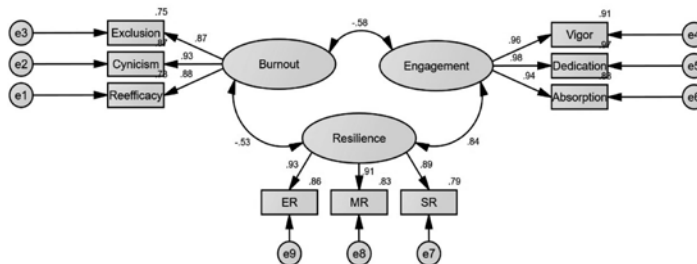


**Figure 3.** *The structural model with standardized estimates*
*(ER; ego resilience; CR; cognitive resilience; SR; social resilience)*

The model fit indices indicate that the measurement model fits the data well. All the indices are within the recommended ranges: CMIN/DF = 1.953 (≤ 3.0), RMSEA = 0.053 (< 0.080), CFI = 0.995 (> 0.9), TLI = 0.992 (> 0.9), and SRMR = 0.0156 (< 0.6).

**Table 6.** *Results of multiple linear regression analysis with SEM*

|                          | S.E.  | C.R     | $p$   | β      | $R^2$ |
|--------------------------|-------|---------|-------|--------|-------|
| Burnout ↔ Resilience     | 0.071 | -8.662  | 0.000 | -0.535 | 0.286 |
| Burnout ↔ Engagement     | 0.070 | -9.454  | 0.000 | -0.577 | 0.333 |
| Resilience ↔ Engagement  | 1.356 | 12.023  | 0.000 | 0.840  | 0.706 |

Table 6 reveals that burnout and resilience could significantly and negatively predict each other (β = -0.535, $p < 0.001$), accounting for 28.6% of the shared variance. Similarly, burnout and engagement could significantly and negatively predict each other (β = -0.577, $p < 0.001$), explaining 33.3% of the shared variance. Besides, resilience and engagement could significantly and positively predict each other (β = 0.840, $p < 0.001$), accounting for 70.6% of the shared variance.

## 6. QUALITATIVE RESULTS

To explore the interplay among burnout, resilience, and engagement in depth, we performed a qualitative analysis of the interview data. The frequency of the codes that emerged from the data is shown in Figure 4. We use bold text to indicate the excerpts that correspond to the three constructs or their components.
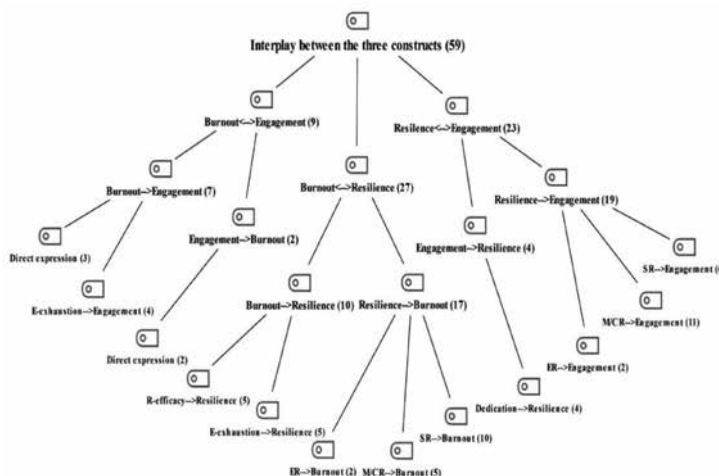


**Figure 4.** *Reciprocal relationships among the three constructs*
*(E-exhaustion: emotional exhaustion; R-efficacy: reduced efficacy; ER: ego resilience; MR: metacognitive resilience; CR: cognitive resilience; SR: social resilience)*

## 6.1. Reciprocity between burnout and resilience

The burnout-related syndrome negatively affected the students' resilience, as they reported experiencing emotional exhaustion and reduced efficacy (5 times, respectively), but not cynicism. These symptoms resulted from their perceived inability to handle some tasks (emotional exhaustion) and their dissatisfaction with the outcomes and consequent frustration (reduced efficacy). The excerpts below reflect this:

**#Student 11:**
*English exercise for a long time and cannot solve it. This lowers my resilience.* (Emotional exhaustion)

**#Student 14:**
*My English grades fluctuate a lot. I feel a huge gap when the grades are low, and this definitely undermines my resilience.* (Reduced efficacy)

The interviewees unanimously reported using resilience strategies to mitigate burnout, with social and metacognitive/cognitive strategies being the most prevalent, and ego strategies being the least. These strategies involved seeking support from parents, teachers, and peers (social, 10 times), adjusting their learning methods and time management (metacognitive/cognitive, 5 times), and enhancing their self-confidence (ego, 2 times). The excerpts below indicate this:

**#Student 6:**
*I think that the frequent communication with my teachers can ease my burnout. When I encounter formidable problems in English learning, I would ask teachers for help and they would give me some guidance.* (Social resilience)

**#Student 8:**
*I rarely feel burned out in learning English, and I think it's because I always manage myself by striking a proper balance between English learning and rest.* (Metacognitive/Cognitive resilience)

**#Student 4:**
*I prefer to hone myself, thinking that people need to endure hardship to achieve greatness. I often tell myself I can do it. I think this method is especially effective for easing my burnout.* (Ego resilience)

## 6.2. Reciprocity between burnout and engagement

The interviewees corroborated the negative effect of burnout on engagement, but only reported emotional exhaustion (4 times) as a burnout symptom, not cynicism or reduced efficacy. They attributed their emotional exhaustion and subsequent disengagement to excessive and daunting English classes and exercises. Some students also explicitly stated the detrimental impact of burnout on their engagement (3 times). The excerpts below show this:

**#Student 2:**
*I often have to memorize a lot of English materials, which makes me feel exhausted and*

*stressed. Even though I want to do my best to finish it, it is too overwhelming for me. This makes it hard for me to stay engaged.* (Emotional exhaustion)

**#Student 3:**
*Burnout would make me less engaged and efficient in learning English. It would also make me "snub" English and lower my interest in English.* (Direct expression)

The interviewees seemed to have a weak perception of the positive effect of engagement on resilience, as they only explicitly stated twice that engagement alleviated their burnout. The following excerpt illustrates this point:

**#Student 14:**
*My engagement in doing English excise does extricate me from my burnout. I feel more enjoyable and less burned out when I'm engaged in learning English.* (Direct expression)

## 6.3. Reciprocity between resilience and engagement

The interviewees strongly endorsed the positive effect of resilience strategies on burnout. They mostly used metacognitive/cognitive (11 times) and social strategies (6 times), and rarely used ego strategies (2 times). These strategies involved applying various learning methods (metacognitive/cognitive), seeking assistance from teachers and peers (social), and boosting their self-trust (ego) to increase their engagement. The excerpts below show this:

**#Student 2:**
*I use some methods to enhance my engagement in learning English, such as finding material that interest me, setting clear goals, and dividing them into small tasks.* (Metacognitive/ Cognitive resilience)

**#Student 7:**
*I often need encouragement from my classmates and teachers. They usually motivate me and help me refocus when I lose interest in learning English.* (Social resilience)

**#Student 15:**
*I usually encourage myself. Learning is my own responsibility, and I can do it step by step without any problem. This way, I can refocus on doing English reading comprehension.* (Ego resilience)

The interviewees confirmed the positive effect of engagement on resilience, but it was less evident, as they only mentioned four times that engagement features improved their resilience. These features were all indicative of dedication, while vigor and absorption were absent. They asserted that enthusiasm, liking, interest, and so on enhanced their resilience. The following excerpt shows this:

**#Student 9:**
*Some positive factors enhance my resilience in my English learning, such as my passion, interest, positive attitude, and clear learning goals.* (Dedication)

## 7. DISCUSSION

This study, drawing on the COR theory, employed a mixed-method approach to explore the reciprocal relationship among burnout, resilience, and engagement of Chinese senior high school EFL students. The quantitative results of this study confirmed that these three constructs were significant predicators of each other.

First, our finding revealed a reciprocal influence between EFL students' burnout and resilience. This means that EFL students experiencing higher levels burnout are prone to be less resilient, which echoes the results of studies conducted in general education (Yu & Chae, 2020), in which the negative influence of burnout on resilience was also detected. On the other hand, this finding suggests that EFL students with higher levels of resilience are less susceptible to burnout. This conclusion is consistent with the findings among college students (Fernández-Castillo & Fernández-Prados, 2023). One plausible justification based on the COR theory (Hobfoll, 2012) is that when students face unformidable challenges, burnout naturally occurs. If students' coping strategies empowered by resilience resources are not functional enough to handle the challenges, subsequent burnout tends to get intensified and chronically eat away their core resilience resources. On the other hand, if students successfully tackle these challenges, their burnout is likely to be mitigated, which in turn strengthens their resilience. Overall, as found in the study by Wang, Derakhshan, and Rahimpour( 2022), students with less burnout might be more resilient in their EFL learning, and vice versa.

Second, a reciprocal relationship between burnout and engagement was also found. This suggests that students perceiving higher levels of burnout were less engaged in their EFL learning, which concurs with prior studies that demonstrate the detrimental effect of students' burnout on their engagement (Atik & Çelik, 2021; Singh et al., 2020). This finding also indicates that students who were more engaged showed less burnout in their EFL learning, which was consistent with the negative predictive effect of engagement on burnout in prior literature in educational settings (Akbaşlı et al., 2019; Wang, Bu, et al., 2021). In fact, the reciprocal causality confirmed in this study is supported by the longitudinal work of Guo et al. (2022), who found that engagement and burnout were mutually causal and could be mutually predicted over time. This bidirectionality between burnout and engagement could be explained by the broaden-and-build theory (Fredrickson, 2001). According to this theory, burnout may increase negative emotions like anxiety and depression that narrow and deplete one's resources (Kahill, 1988; Spiller et al., 2021), thereby diminishing engagement. Conversely, engagement could foster positive emotions such as enjoyment and joy that broaden and build one's resources (Greenier et al., 2021; Ouweneel et al., 2012), consequently mitigate burnout.

Third, it was also found that there was a reciprocal link between resilience and engagement. In other words, resilient students are more likely to be more engaged in their EFL learning, which is supported by sporadic studies conducted in general education that found that students who had higher levels of confidence and coping skills in their academic tasks were more likely to be involved and interested in their learning activities (Ahmed et al., 2018; Romano et al., 2021; Versteeg et al., 2022). On the other hand, students who are more engaged tend to be more resilient in their EFL learning. To the best of our knowledge, this finding is the first empirical evidence for the reciprocity between resilience and

engagement in both general education and EFL learning contexts. This reciprocal relationship can be accounted for in terms of the COR theory (Hobfoll, 2012). This theory suggests that resilience and engagement form a positive feedback loop that enhance each other. It means that when people successfully experience the rewards of engagement using their coping strategies generated by their resilience, they become more resilient to further invest their resources into the engagement process. On balance, students with higher resilience might be more engaged in their EFL learning, and vice versa.

To triangulate our quantitative research findings, we adopted the sequential qualitative approach to corroborate the reciprocal causality found in our quantitative analysis and further enriched a nuanced picture of the interrelationships between the three constructs. Regarding the mutual causality between burnout and resilience, it was found that emotional exhaustion and reduced efficacy negatively affected resilience, while social resilience and metacognitive/cognitive resilience made major contributions to burnout reduction. Concerning the reciprocal relationship between burnout and engagement, emotional exhaustion was identified as the main factor that reduced engagement. However, we did not find any evidence that any component of engagement alleviated burnout, although some participants mentioned the potential role of engagement in mitigating burnout. With respect to the bidirectional link between resilience and engagement, metacognitive/cognitive resilience and social resilience were recognized as the key components that enhanced engagement, while dedication was the only component of engagement that improved resilience.

## 8. CONCLUSION

This mixed-methods study revealed reciprocal relationships among burnout, resilience, and engagement among Chinese senior high school EFL students. The quantitative results showed that burnout negatively predicted resilience and engagement, and vice versa; resilience positively predicted engagement, and vice versa. The qualitative results corroborated the reciprocal relationships and further specified the particular components of the three constructs involved in the interactions.

The study has both theoretical and practical implications. It is, to the best of our knowledge, the initial attempt to apply the COR theory to the EFL learning field, providing a novel theoretical lens. Additionally, it shifts the attention from teachers to students, especially Chinese senior high school EFL students who face the high-stake test, Gaokao (College Entrance Examination in China). Moreover, it empirically verifies the feedback loop among the three constructs. Furthermore, it offers insights into the contribution of each component of the constructs, enabling a more nuanced understanding.

Practically, this study suggests that educators should provide students with pedagogical interventions to establish a positive feedback loop. Firstly, to help students reduce their burnout, educators should identify and alleviate the sources of stress, such as excessive workload, unrealistic expectations, or lack of feedback. Another way educators can help students is by fostering their self-efficacy, coping skills, and optimism to enhance their resilience. Finally, educators can create a supportive learning environment that promotes students' motivation, grit, and enjoyment to increase their engagement. By doing so, educators can help students achieve a positive feedback loop that enhances their EFL performance and well-being.

This study is not without limitations. First, it adopts a cross-sectional design that precludes the inference of causal directionality over time among the three constructs. Therefore, future studies could employ a cross-lagged panel design to test the temporal causal hypotheses. Besides, the sample is not sufficiently generalizable, as it only includes participants from two provinces of China. Hence, future studies could recruit participants from different regions and backgrounds. Moreover, we did not explore the possible mediating effects of each construct on the other two constructs. Thus, future studies could examine the complex mediation mechanisms among the three constructs.

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