

# Development of an English Cloze Test Model for Middle School Students' English Learning Strategies, Motivation and Self-Efficacy

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**To Link this Article:** <http://dx.doi.org/10.6007/IJARPED/v13-i4/24324> DOI:10.6007/IJARPED/v13-i4/24324

**Published Online:** 26 November 2024

## Abstract

The English Cloze Test evaluates students' foundational English knowledge and provides a relatively accurate indication of students' overall English proficiency. The researchers conducted this study quantitatively using surveys and Partial Least Square-Structural Equational Modelling (PLS-SEM). They involved 562 middle school students, including senior and junior high school students; it attempted to establish a relationship model of English learning strategies, motivation and self-efficacy in Cloze Test learning and study the relationship between these in terms of gender, grade level, and English scores. The study discovered a significant positive correlation between learning strategy and motivation and between motivation and self-efficacy. Furthermore, there are significant positive correlations between English scores and learning strategies, motivation, and self-efficacy; gender exhibited a negative correlation with self-efficacy; and negative correlations between grade level and learning strategies.

**Keywords:** English Cloze Test Model, English Learning Strategies, Motivation, Self-Efficacy, PLS-SEM

## Introduction

English serves as a global lingua franca and holds considerable importance as a subject in China (Wu, 2023). The primary method of English learning is the test. Cloze Tests measure second language proficiency (Abraham & Chapelle, 1992). In 1953, Taylor introduced the "cloze procedure" as a metric to measure the readability of contextual materials. Since then, cloze and its variants have become integral sub-tests in numerous large-scale assessments internationally and in China (Zou, 2012).

A Cloze Test is a passage with a few sentences of introduction followed by a text with deleted words (gaps) with a consistent number of words (from five to eleven) between them. The test taker's responsibility is to predict the deleted words based on the words given in the text (Brown et al., 2012; Shahnazari-Dorcheh et al., 2012). In the Senior High School Entrance

Examination and National College Entrance Examination English Test, the Cloze Test counts for 17% and 30% of the final result, respectively, with 20 and 30 points. In the investigation, the author found that 41.3% of the students think that Multiple Choice Cloze Test is the most challenging question in English objective questions, and 31.1% think that the Open Cloze Test is the most difficult. Cloze Test is a highly challenging question type in students' thoughts. Although the three types of Cloze Tests have varied shapes, they are all variations of Open Cloze. Therefore, this paper classifies these three types of questions as Cloze Test and conducts research based on Open Cloze Test.

English Cloze Test can not only comprehensively test the students' basic English knowledge, especially vocabulary and grammar but also test students' level of application of essential knowledge and scientifically reflect students' comprehensive English proficiency to a certain degree (Sun, 2018). Previous scholars only studied Cloze Test itself, while the author wanted to study Cloze Test from three aspects: Learning Strategy (LS), Learning Motivation and Self-efficacy, and to model and explore the relationship between the three.

### **Literature Review**

#### *The Definition of English Learning Strategy, Motivation and Self-Efficacy*

In this part, the author mainly summarizes relevant literatures from three aspects: English Learning Strategies, Motivation, and Self-efficacy, including their definition, function, classification, application, selection of each research index and summary of each term.

Learning Strategies (LS) refer to learners' numerous approaches, techniques, and methods to improve their language acquisition and English proficiency (Khansir et al., 2021). LS serve an essential role in the process of acquiring a second or foreign language (Masitoh et al., 2023). These strategies are conscious and deliberate actions language learners perform to enhance their language learning experience. In contrast to other learner characteristics, such as disposition and cognitive style (Bonyadi et al., 2012), LS can be taught, according to Oxford and Nyikos (1989). Researchers have discovered that effective LS positively impact language learning achievement (Masitoh et al., 2023). In 1985, O'Malley and Chamot (1990) proposed a categorization of LS into three primary types: metacognitive, cognitive, and social. This study selects three contents—metacognitive strategy, cognitive strategy, and affective strategy—to investigate and study students' learning situation of Cloze Test.

Motivation is the desire and urge to act on a subject (Bakkaloğlu & Pilten, 2023). In Second Language Learning, motivation is crucial (Adnan & Sayadi, 2021). Motivation is a significant factor associated with positive academic outcomes and psychological well-being (Pajares, 2001). Motivation is one of the essential concepts for comprehending academic performance and determining LS (Pintrich et al., 1995). Williams et al. (2011) realized that various factors affect students' motivation to learn, including self-confidence, learning interest, learning environment, self-identity, social expectation, reward and punishment, and learning attitude. This study selects empowerment, usefulness, success, interest, and caring as learning motivation indicators after considering the classification framework of LS and the actual learning circumstance of the Cloze Test.

According to Bandura (1986), he defines self-efficacy as an individual's perception of his or her capacity to plan and execute the courses of action necessary to achieve specified

performance categories. Numerous studies have suggested that self-efficacy can accurately predict learning performance and motivation (Teng et al., 2021; Ueki & Takeuchi, 2013). Some researchers (Bandura, 1986; Pajares, 2001) contend that self-efficacy exerts a strong influence on the effort, persistence, and achievement of students. Numerous studies (Dale, 2013; Pajares, 2001) have examined the relationship between self-efficacy and general academic achievement, which is consistently positive. The author chose confidence, ability, and setbacks as self-efficacy indicators based on the research above.

#### *Theoretical model for Cognitive Learning Theory, Achievement Motivation Theory and Self-efficacy Theory*

This section encompasses the original concepts, definitions, classifications, and rationales for the Cognitive Learning Theory, Achievement Motivation Theory, and Self-efficacy Theory.

Cognitive Learning Theory is a theoretical framework concerned with how individuals acquire and process knowledge (Feng et al., 2018). Cognitive learning theory focuses on learners' cognitive and psychological processes during the learning process. At the same time, LS refer to the behaviours and methods that learners apply in actual learning situations to enhance cognitive processes and achieve more effective learning outcomes. Learners can align their choice and application of appropriate learning strategies with the principles of cognitive learning theory, thereby promoting a more in-depth, meaningful, and practical learning process. This relationship assists learners in better comprehending and applying learning strategies, ultimately leading to improved learning outcomes.

Achievement Motivation occurs when individuals intrinsically drive themselves at a psychological level to attain exceptional outcomes in a specific domain, thus propelling individual behaviours and actions towards their intended goals and accomplishing challenging objectives. In terms of behaviour, it manifests as a type of deliberate pursuit, a type of completion attachment that people believe will significantly impact them if they pursue the objective. Research indicates that achievement motivation is crucial for achievement behavior (Pan, 2021). Therefore, from the perspective of achievement motivation theory and English subject learning, the author discusses applying achievement motivation theory in high school English learning.

Self-efficacy influences an individual's cognitive abilities, perspective on things, and subsequent behavioural choices. When people are confident in their ability in a particular area, they choose duties with incredible difficulty and greater expectations. Those with high self-efficacy tend to remain composed and disciplined despite unforeseen events, meticulously addressing problems. Consequently, students' academic achievement will be influenced by their courage, self-assurance, and learning capacity. Prior to learning English, students will develop a sense of themselves. Students will determine whether they can complete a particular challenge and whether the difficulty will decrease as their determination increases. Consequently, self-efficacy is closely related to individual learning effects and learning dynamics.

#### *Recent Relevant Research*

Researchers have investigated their utilization patterns in English language learning strategies. For instance, Lestari and Wahyudin (2020) explored the strategies employed by undergraduate EFL students, revealing five distinct types, with metacognitive strategies being

prominent. Similarly, Khansir et al. (2021) studied Iranian post-graduate EFL students, finding cognitive and metacognitive strategies to be frequently utilized. Siripitakchai (2021) examined the correlation between English LS and reading competence among Thai students, while Deng et al. (2022) explored self-regulated LS and academic achievement in college English learners. These studies establish connections between strategies and competencies, though they may only consider some factors influencing academic performance.

Some studies have focused on relationships among various indicators, but fewer have employed modelling to explore these links comprehensively. Hayat et al. (2020) studied medical students, discovering that self-efficacy impacts learning-related emotions and metacognitive strategies. Researcher Wei (2021) explored L2 motivation and self-efficacy in English proficiency among Chinese university students. Srisopha (2022) investigated the causal relationship between LS and achievement motivation among physical education students. The studies above have yet to conduct comprehensive model research encompassing learning strategies, motivation, and self-efficacy. Therefore, the present research aims to fill this gap by examining the interconnectedness and influences of these three aspects. Through a holistic modelling approach, this study seeks to provide a deeper and more nuanced understanding of how learning strategies, motivation, and self-efficacy interact and collectively contribute to students' English language learning outcomes.

## **Methodology**

### *Participants*

The participants comprised 562 middle school students from several different cities in northern China. Middle school students encompass senior and junior high school students, with distribution across 7th through 12th grades and varying results in English and Cloze Tests. The selection of senior and high school students of different grades is first because it is an essential stage of English learning. Cloze Test is also a compulsory subject in middle school exams. Most students think Cloze Test is the most challenging type of English objective question, so they are deeply troubled by it. Secondly, participants are distributed in different grades and grades, which can make the overall results of the data more complete and realistic.

### *Questionnaire and Data Collection Procedure*

The researchers developed an online questionnaire using Wenjuanxing software, comprising three sections and 56 questions (refer to Appendix A). It was a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), including items concerning learners' English learning strategy, motivation and self-efficacy. The third part was two open-ended questions, students' suggestions and opinions, and the development trend of the Cloze Test in the future.

We assessed English learning strategies by combining three parts, each containing 20 questions sourced from the studies of Deng et al. (2022), Norman et al. (2022) and Chen & Zhen (2002), and detailed in the Appendix A. For the assessment of motivation, a questionnaire was developed based on references from Chavez (2021), and Talvitie-Siple (2007). The measurement of self-efficacy drew from the questionnaires of He (2022). The response rate of the survey was 96 per cent, in which the answering the survey was assisted by teachers as needed. After careful study by the author and the team, the questionnaire was

issued and collected in different cities after reference to previous studies by many scholars, review by two experts and two teachers, and small-scale testing. Participants were given online informed consent to participate.

### *Research Model and Hypothesis*

The data was analyzed using partial least square-structural equation modelling (PLS-SEM). A PLS-SEM model consists of two elements. First, there is a structural model that links together the constructs; it displays the relationships between the constructs. Second, a construct's measurement model displays the relationships between the construct and its indicator variables (rectangles) (Hair, 2014). There are two types of measurement models: reflective and formative (Kante et al., 2018). The summary of different criteria for assessing reflective and formative measurement models are refer to Appendix B (Table B1 & B2).

The study exploratory investigates the relationship among middle school students' English learning strategies, motivation and self-efficacy of the Cloze Test. All the constructs proposed in the previous section are included in a hierarchical model, considering the Cloze Test model. The constructs and their respective indicators are summarized in the Table 1. From these constructs, using the theoretical and empirical approach from the previous section, we then construct a model as displayed in Figure 1. The software used to run PLS-SEM analysis is SmartPLS 4. This model is based on an initial exploration and contains five hypothetical causal relationships between constructs that will be tested on a data set using a so-called recursive PLS-SEM. The research model, constructs and hypotheses are as follows:

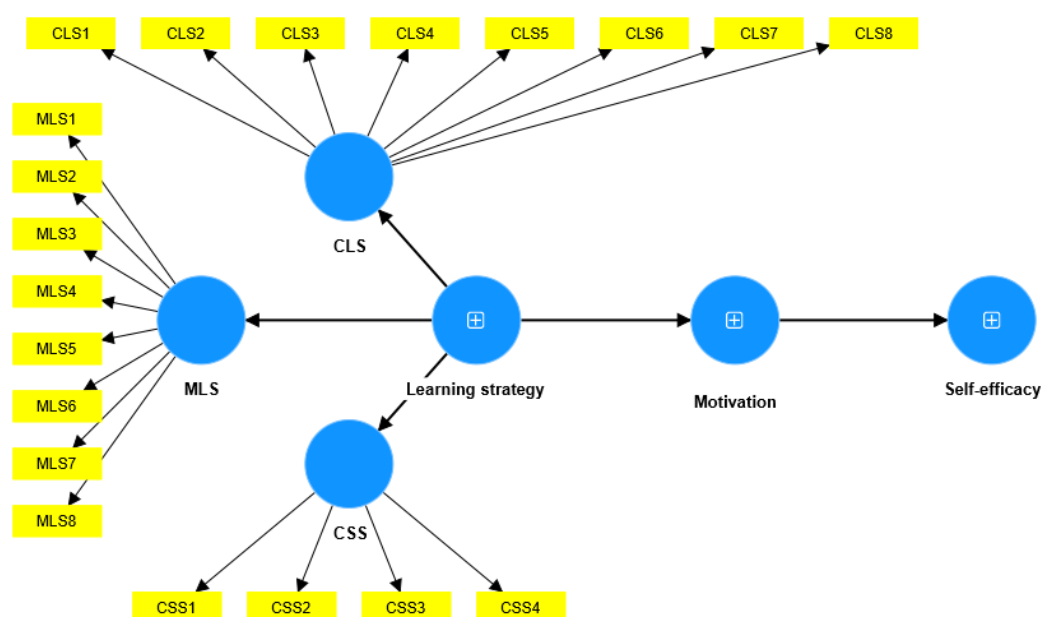


Figure 1 Model used for PLS-SEM analysis for investigated of middle school students' learning strategy, motivation and self-efficacy of English Cloze Test

Table 1

*The Constructs and Respective Indicators*

| Construct                           | Sub-construct                         |                 |  | Indicator               |
|-------------------------------------|---------------------------------------|-----------------|--|-------------------------|
| Learning strategy                   | Cognitive Learning Strategy (CLS)     |                 |  | Predict essay main idea |
|                                     |                                       |                 |  | Structural analysis     |
|                                     |                                       |                 |  | Grammatical analysis    |
|                                     | Metacognitive Learning Strategy (MLS) | Self-management |  |                         |
|                                     |                                       | Self-evaluation |  |                         |
| Communication Social Strategy (CSS) | Focused attention                     |                 |  |                         |
|                                     | Social strategy                       |                 |  |                         |
| Learning Motivation                 | Affective strategy                    |                 |  |                         |
|                                     | Empowerment,Success Interest, Caring  |                 |  |                         |
| Self-efficacy                       | Confidence, Ability                   |                 |  |                         |
|                                     | Setbacks                              |                 |  |                         |

The hypothesis about the relationship between learning strategy, motivation and self-efficacy is as follows:

- H1. Learning strategy is positively related to cognitive learning strategy.
- H2. Learning strategy is positively related to metacognitive learning strategy.
- H3. Learning strategy is positively related to communication strategy Social strategy.
- H4. Learning motivation is positively related to learning strategy.
- H5. Self-efficacy is positively related to learning strategy.

## Results

### *Demographical findings*

More than half (64.2%, 361/562) of the participants were female, while the remaining were male (35.7%, 201/518). The sample represents an equal education level balance, with 51.6% senior high school students and 49% junior students. There is a dispersion of English scores ranging from 40 to 150 points. Most people score between 71 and 110 (51.7%), showing that most students are at an intermediate level. A significant portion, 50% of students, obtained Cloze Test scores between 6 and 8 points, suggesting a certain level of achievement. However, only 13% of students achieved scores of 9 to 10 points, and 27.9% scored between 4 and 5 points. This emphasizes that perfect scores were achieved by only a minority of students, signalling a significant opportunity to enhance the Cloze Test performance of most students. Regarding the most challenging subjective question in English, 41.3% and 31.1% of students identified the Cloze Test Passage and the Discourse Grammar Cloze Test as the most difficult, underscoring that the Cloze Test poses a significant challenge for students. The detailed information about participants can be found in the Table 2.

Table 2

*Demographics of the Participants*

| Demographics of the participants                  |      |                              |                      |            |
|---------------------------------------------------|------|------------------------------|----------------------|------------|
| Variable                                          |      | Categories                   | Frequency/Statistics | Percentage |
| Gender                                            |      | Male                         | 201                  | 35.7%      |
|                                                   |      | Female                       | 361                  | 64.2%      |
| Education level                                   |      | Senior high school           | 290                  | 51.6%      |
|                                                   |      | Junior high school           | 272                  | 48.4%      |
| English scores                                    |      | under 40 points              | 47                   | 8.3%       |
|                                                   |      | 41-70 points                 | 114                  | 20.2%      |
|                                                   |      | 71-90 points                 | 149                  | 26.5%      |
|                                                   |      | 91-110 points                | 142                  | 25.2%      |
|                                                   |      | 111-130 points               | 101                  | 17.9%      |
|                                                   |      | 130-150 points               | 9                    | 1.6%       |
| Cloze scores                                      | Test | 1-3 points                   | 50                   | 8.9%       |
|                                                   |      | 4-5 points                   | 157                  | 27.9%      |
|                                                   |      | 6-8 points                   | 281                  | 50.0%      |
|                                                   |      | 9-10 points                  | 73                   | 13.0%      |
| The most difficult subjective question in English | most | Multiple Choice              | 14                   | 2.5%       |
|                                                   |      | Matching Questions           | 48                   | 8.5%       |
|                                                   | in   | Cloze Test Passage           | 232                  | 41.3%      |
|                                                   |      | Discourse Grammar Cloze Test | 175                  | 31.1%      |
|                                                   |      | Reading Comprehension        | 93                   | 16.5%      |

**The Measurement Model**

The measurement model analysis findings show that the constructs' indicators achieved internal consistency reliability, convergent validity, and divergent validity.

*Reliability and Validity*

This study adopted the internal consistency method to evaluate internal reliability. Table 3 shows that the internal consistency of these scales for CLS, CSS, MLS, Motivation and Self-efficacy were  $\alpha=.862$ ,  $\alpha=.861$ ,  $\alpha=.896$ ,  $\alpha=.903$  and  $\alpha=.902$ , respectively. Table 3 also presents the composite reliability (CR) of each factor.; CR values of all factors exceed 0.800. The proposed threshold value for confirmative research:  $CA>.700$  (Cronbach, 1951),  $CR>.700$  (Werts et al., 1974), indicating that the questionnaire was with reliability. The average variance extracted (AVE) was used to evaluate the validity of the measurement; all the construct items exhibited values exceeding 0.5, with adequate AVE ranging from 0.508 to 0.582. Therefore, the reliability and validity of the research constructs were confirmed.

Table 3

*Internal Consistency Reliability Results*

| Construct     | AVE   | CR    | R <sup>2</sup> | Cronbach's alpha (CA) |
|---------------|-------|-------|----------------|-----------------------|
| CLS           | 0.508 | 0.892 | 0.668          | 0.862                 |
| CSS           | 0.708 | 0.906 | 0.777          | 0.861                 |
| MLS           | 0.582 | 0.917 | 0.871          | 0.896                 |
| Motivation    | 0.568 | 0.921 | 0.622          | 0.903                 |
| Self-efficacy | 0.575 | 0.922 | 0.714          | 0.902                 |

Average variance extracted (AVE), Composite reliability (CR), R-square (R<sup>2</sup>), Cronbach's alpha (CA)

*Convergent Validity*

CFA (Confirmatory Factor Analysis) was used to examine the convergent validity of each questionnaire. The right column in Appendix A presents CFA's completely standardized factor loadings. Each was significant ( $p < 0.05$ ), indicating that the items reflect their underlying latent construct. All indicator loadings exceed the 0.5 cut-off point (Doğan et al., 2019). This indicates that all the indicators (e.g., "Take a quick look at the text.") are connected to their corresponding constructs (e.g., Cognitive learning strategy). This affirms the convergent validity of the measurement model (Anderson & Gerbing, 1988).

*Divergent Validity*

Divergent or discriminant validity confirms whether constructs that should not have any relationship, indeed, are not related to each other. According to Hair (2014), squared correlations below the diagonal should be lower than the AVE of each latent variable to confirm discriminant validity. Table 4 confirms the discriminant validity of the latent variables.

Table 4

*Divergent Validity Results (Fornell-Larcker Criterion)*

|               | CLS   | CSS   | MLS   | Motivation | Self-efficacy |
|---------------|-------|-------|-------|------------|---------------|
| CLS           | 0.713 |       |       |            |               |
| CSS           | 0.571 | 0.841 |       |            |               |
| MLS           | 0.612 | 0.793 | 0.763 |            |               |
| Motivation    | 0.532 | 0.808 | 0.747 | 0.753      |               |
| Self-efficacy | 0.485 | 0.733 | 0.698 | 0.845      | 0.758         |

**The Structural Model**

The assessment of the structural model was employed to test the hypothesized theoretical relationships within the proposed conceptual framework (Hayat et al., 2020), encompassing the relationships among CLS, CSS, MLS, Motivation, and Self-efficacy (as depicted in Figure 2). The coefficient of determination (R<sup>2</sup> values) and path coefficients (beta values) served to ascertain the extent to which the data substantiated the hypothesized relationships. Furthermore, PLS path analysis through bootstrapping was employed to identify the path correlations among the research variables, aiding in assessing the significance of the path coefficients for the hypothesized relationships (Hayat et al., 2020).

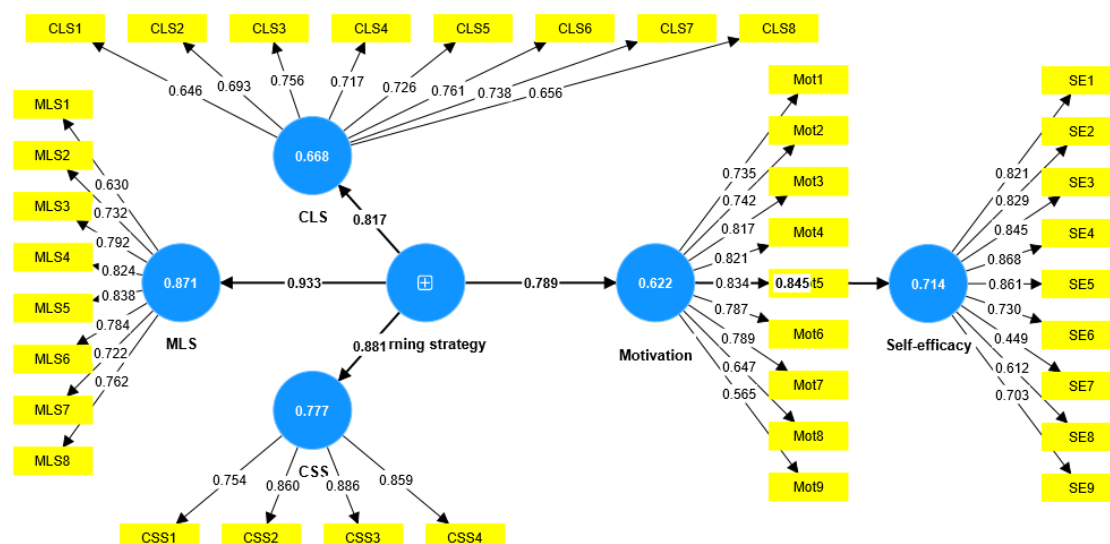


Figure 2 PLS-SEM structural model analysis

The path coefficients estimated from the PLS analysis are provided in Figure 2. According to the results, hypotheses H1, H2, H3, H4, and H5 were all supported (Table 5). To determine the significance of all the relationships in the model, bootstrapping procedure as a re-sampling technique was applied. Based on the estimated path coefficients shown in Figure 2, the Learning strategy demonstrated a direct, positive, and statistically significant effect on CLS (H1  $p < 0.001$ ), CSS (H2  $p < 0.001$ ), MLS (H3  $p < 0.001$ ), and Motivation (H4  $p < 0.001$ ). Similarly, Motivation had a direct, positive, and statistically significant effect on Self-efficacy (H5  $p < 0.001$ ).

Table 5

*Structural Model Results*

| Hypothesis                         | Mean  | Standard deviation | Remark    |
|------------------------------------|-------|--------------------|-----------|
| H1 Learning strategy -> CLS        | 0.817 | 0.020***           | Supported |
| H2 Learning strategy -> CSS        | 0.882 | 0.010***           | Supported |
| H3 Learning strategy -> MLS        | 0.934 | 0.006***           | Supported |
| H4 Learning strategy -> Motivation | 0.790 | 0.019***           | Supported |
| H5 Motivation -> Self-efficacy     | 0.846 | 0.014***           | Supported |

*PLS-SEM Estimation with Control Variable*

This model has three control variables: English scores, gender, and grade. The aim is to explore the relationships between these control variables and learning strategies, motivation, and self-efficacy. Figure 3 illustrates the PLS-SEM control variables structural model, depicting a certain degree of correlation among them.

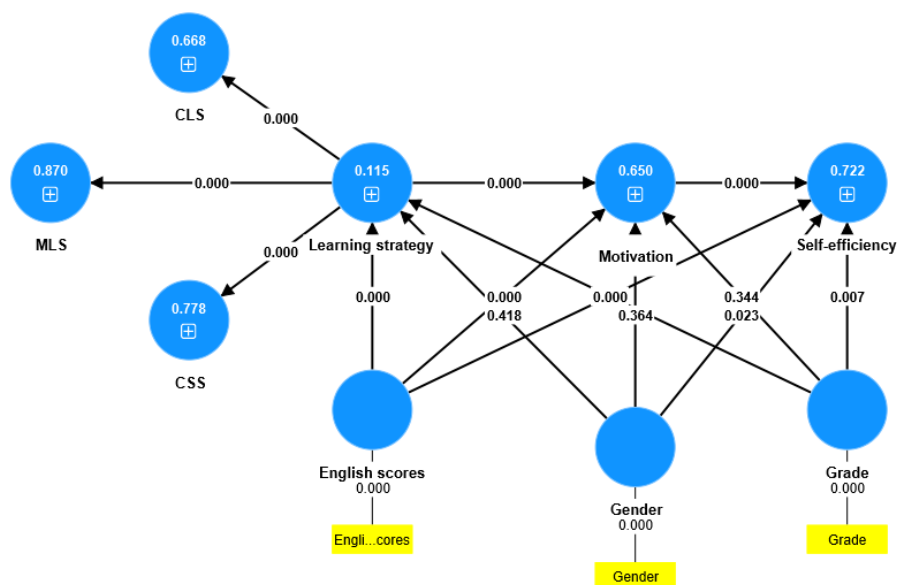


Figure 3 PLS-SEM control variables structural model analysis

As indicated by Table 6, there are significant positive correlations between English scores and learning strategies ( $p < 0.001$ ), motivation ( $p < 0.001$ ), and self-efficacy ( $p < 0.01$ ). This implies higher scores are associated with higher learning strategies, motivation, and self-efficacy. Gender exhibits a non-significant relationship with learning strategies and motivation while negatively correlating with self-efficacy ( $p < 0.05$ ). This suggests that gender has a limited impact on learning strategies and motivation, indicating lower self-efficacy among females. There is no significant correlation between grade and motivation, but there are significant negative correlations between grade and learning strategies ( $p < 0.001$ ), as well as grade and self-efficacy ( $p < 0.05$ ). This suggests that students' learning strategies and self-efficacy decrease as they progress to higher grades. This result is consistent with previous research. This study reveals complex relationships between English scores, gender, grade, learning strategies, motivation, and self-efficacy. These findings provide valuable insights for educational practices and future research, particularly regarding enhancing students' learning strategies, motivation, and self-efficacy and gaining a deeper understanding of the interactions among these factors.

Table 6

*Control Variables Structural Model Results*

|                                     | Mean   | Standard deviation | Remark        |
|-------------------------------------|--------|--------------------|---------------|
| English scores -> Learning strategy | 0.351  | 0.037***           | Supported     |
| English scores -> Motivation        | 0.168  | 0.031***           | Supported     |
| English scores -> Self-efficacy     | 0.085  | 0.028**            | Supported     |
| Gender -> Learning strategy         | -0.019 | 0.087              | Not supported |
| Gender -> Motivation                | 0.018  | 0.055              | Not supported |
| Gender -> Self-efficacy             | -0.094 | 0.048*             | Supported     |
| Grade -> Learning strategy          | -0.144 | 0.041***           | Supported     |
| Grade -> Motivation                 | 0.010  | 0.025              | Not supported |
| Grade -> Self-efficiency            | -0.055 | 0.023*             | Supported     |

\*\*\* $p < 0.001$ , \*\* $p < 0.01$ , \* $p < 0.05$

## Discussions

64.2% of the 562 Cloze Test survey respondents were female, while the remaining 35.7% were male. The grade ranged from seventh to twelfth (junior to senior high school). For the most challenging subjective queries in English, 41.3% identified the Cloze Test and 31.1% the Discourse Grammar Cloze Test. According to the findings, a substantial majority (72.4%) of the participants viewed the Cloze Test as a formidable obstacle. This highlights the difficulty of the Cloze Test for middle school students. As a result, it is necessary to research students' learning strategies, motivation, and self-efficacy concerning the Cloze Test. This study seeks to gain insight into students' circumstances and provide targeted assistance to help them develop effective strategies for mastering the Cloze Test, ultimately resulting in enhanced English language performance.

Cognitive Learning Theory emphasizes the role of learners' cognitive processes and strategies in learning. At the same time, Self-efficacy Theory focuses on individuals' beliefs and expectations about their abilities, which influence their performance and motivation in various contexts. Self-efficacy is closely related to achievement motivation. Someone who believes they can complete a task (high self-efficacy) is likelier to feel proud, motivated, and consistently committed to pursuing their goals. In summary, there is a close relationship among Cognitive Learning Theory, Self-Efficacy Theory, and Achievement Motivation Theory. They mutually influence and collectively explain various aspects of the learning and achievement process. Our results strongly support predictive links among learning strategies, motivation, and self-efficacy. On the one hand, the learning strategy directly, positively, and statistically significantly impacted motivation.

This finding aligns with the conclusions of Bakkaloğlu and Pilten (2023), where their study also indicated a positive impact of learning strategy on motivation. On the other hand, motivation displayed a direct, positive, and statistically significant impact on self-efficacy. Scholars such as Williams (2011), and Ueki (2013) have concluded that there is a significant correlation between self-efficacy and motivation. However, the findings of Hosseini & Vahidnia (2013) suggested a negative relationship between motivation and self-efficacy, in contrast to the results of this study.

The Cloze Test Model consists of five constructs: MLS, CLS, CSS, Motivation, and Self-efficacy. Their respective means are 3.499, 3.191, 3.496, 3.440, and 3.208 (see Appendix A). This indicates that students primarily employ Metacognitive Learning Strategy (MLS) and Communication Social Strategy (CSS) when learning Cloze Test. This finding is consistent with the results of Lestari & Wahyudin (2020), which also emphasizes the significance of Metacognitive in Language Learning Strategy. In addition, all indicators of these five constructs obtained loadings above the 0.5 cut-off point (Doğan et al., 2019). This indicates that all the indicators (e.g. Take a quick look at the text.) are related to their respective constructs (e.g. Cognitive learning strategy).

The control variable structural measurement model analysis findings show significant positive correlations between English scores and learning strategies, motivation, and self-efficacy. The findings indicate that students with higher academic performance tend to possess more robust learning strategies, motivation, and self-efficacy. This aligns with the conclusions drawn by (Cohen et al., 1980; Greene, 2001), as well as (Bakkaloğlu & Pilten, 2023; Hashim et

al., 2018). Gender exhibited a negative correlation with self-efficacy. Mei (2018) suggested that males and females exhibit distinct thinking patterns, leading to varying degrees of differences in the application of learning strategies among learners of different genders. However, this study has arrived at a contrasting conclusion, finding no significant correlation between gender, learning strategies, and motivation. This might indicate that societal development has potentially diminished traditional gender-based disparities and fostered a more inclusive learning environment. There are notable negative correlations between grade level and learning strategies. The decreasing use of learning strategies with higher grade levels could be attributed to changes in study habits, shifts in learning motivation, and the influence of cognitive development. As student progress to higher grades, they may gradually develop established study routines and become more inclined to rely on their own experiences and intuition rather than actively seeking and adopting various learning strategies.

### Conclusions

The present study took a significant step in understanding the relationships among Learning Strategy, Motivation and Self-efficacy in Cloze Test learning. In this survey involving 562 participants, predominantly female (64.2%) and spanning grades 7th to 12th, the Cloze Test posed a significant challenge, with 72.4% finding it difficult. This underscores the need to research students' learning strategies, motivation, and self-efficacy. Cognitive Learning and Self-efficacy Theories play critical roles in influencing performance and motivation.

We observed strong correlations between learning strategies, motivation, and self-efficacy. The Cloze Test Model's constructs, particularly Metacognitive Learning Strategy and Communication Social Strategy, prove pivotal. Academic excellence correlates with robust learning strategies. While gender impacts self-efficacy, societal progress might reduce such disparities. Higher grade levels see reduced strategy use due to evolving habits and cognitive changes. Developing an English Cloze Test model tailored to middle school students enhances their test-taking skills and positively impacts their broader language-learning process. It empowers students with practical strategies, fuels their motivation, and contributes to their self-efficacy, all culminating in improved English language proficiency.

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