

# Effect of Background Knowledge, Writing Self-Efficacy and Critical Thinking on Writing Performance

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## ABSTRACT

This study examines how students' writing performance is impacted by their writing self-efficacy, background knowledge, and critical thinking. This study uses a survey method to adopt a quantitative approach. Here, 400 Malaysian University English Test (MUET) candidates from 26 Penang Malaysian schools comprise the sample. The research used basic random sampling. Four instruments have been used to collect the data: one argumentative writing task and three questionnaires. Using Smart PLS 4.0, causal correlational analysis was necessary to test the hypotheses. Results yielded by Structural Equation Modeling (SEM) indicated that background knowledge does not directly affect writing performance. Furthermore, writing self-efficacy, as well as critical thinking directly affect writing performance. This study's results may be used as a springboard to help teachers better understand background knowledge, writing self-efficacy, and critical thinking, as writing is an integral component of MUET. Therefore, it might provide insight into how teachers can help these Second Language (L2) writers enhance their background knowledge, writing self-efficacy, and critical thinking.

**Keywords:** Background knowledge; critical thinking; writing self-efficacy; structural equation modelling; Malaysian ESL students

## INTRODUCTION

In today's rapidly evolving world, the English language has been elevated to a critical communication language and the primary means of instruction in education. Almost every field in the world uses English, which includes engineering and technology, medicine, research, education, banking, business, film industry, trade and commerce, science, tourism, internet, advertising, as well as pharmacy, to name a few (Rao, 2019). Several countries, including Malaysia, learn English as a Second Language (ESL). Arif et al. (2020) stated that in numerous universities and primary as well as secondary schools in Malaysia, the English language is mandatory.

Apart from listening, speaking, reading, and writing is among the four language skills necessary for communication. Writing is also a method of expressing thoughts, memories, and feelings in written form. Putra (2012) asserted that writing is critical in language and other subject classes since it is one of the few language abilities that will always remain relevant in education. To ascertain an individual's intellectual capacity and communication ability, the best platform is always the writing ability (Stapa & Ibaharim, 2020). According to Graham (2019), writing is a fundamental ability that all language students, regardless of their level, should be able to demonstrate that they have mastered. Moreover, students who demonstrate great writing skills have a better chance of meeting the educational and employable standards placed on them.

The Malaysian University Examination Test (MUET), comprising writing as one of its components, is required for students who wish to pursue higher education. Malaysian

pre-university students must pass the MUET, an English language proficiency test, to be granted admission to universities. Through MUET, four skills— speaking, listening, writing, and reading—are assessed. The 2015 MUET Regulations, Test Specifications, Test Format, as well as Sample Questions sheets all state that the test's objective is to evaluate candidates' English language proficiency before admission to tertiary study. The MUET curriculum's goal assures pre-university students are well-prepared for university courses that require a certain level of English proficiency. A band scale with a range of 1 (lowest) to 6 (highest) is utilized in order to classify the scores that have been combined, ranging from 0 to 300 (Malaysian Examinations Council, 2006). For Malaysian students, meeting the required band is a requirement for admission to Malaysia's public universities. Based on their MUET scores, local graduates who were admitted to a public

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institution had to enrol in an adequate number of credit-bearing English courses.

The Malaysian English Language curriculum requires all students to grasp the fundamental ability to write (Puteh et al., 2010). There are several reasons why Malaysian ESL students need help with writing assignments, including cognitive challenges and low language proficiency in English (Ghulamuddin et al., 2021). Note that poor writing is seen in students' exams. According to Yunus et al. (2020), 25.45% of 329,024 national school students have failed the Ujian Pencapaian Sekolah Rendah (UPSR) English writing exams 2018. Other than that, Zakaria and Abdul Aziz (2019) discovered that 80,113 out of 388,899 2018 Sijil Pelajaran Malaysia (SPM) students failed their English papers. Local studies that were done recently presented that many MUET students still need help with writing. According to Jee and Aziz (2021), as cited in Parnabas et al. (2022), extended writing is one of the greatest difficulties pre-university students in MUET confront.

According to research (Broaddus, 2012; Pajares et al., 2007; Stewart et al., 2015), improving writing performance is correlated with variables like writing self-efficacy. Moreover, past studies have demonstrated that writing self-efficacy improves ESL writing proficiency (Chea & Shumow, 2017; Kirmizi & Kirmizi, 2015). This element appears to favorably impact how well students perform in writing. Studies on ESL writing are scarce, and the findings are insufficient despite earlier research showing the critical nature of background or topical knowledge in ESL. Among the four previous studies examined by (Gustilo & Magno, 2015; He & Shi, 2012; Meihami et al., 2018; Tedick, 1990), close familiarity with the subject influenced writing performance.

Much research has also been conducted on critical thinking in fields other than language, like information technology, business, and nursing. However, much research has not yet been done on the technique in language studies (Nejad et al., 2022). Second, most of the research on the relationship between writing and critical thinking was only done at the surface level and not in depth at the subskills that critical thinking and writing encompass, except only a few have done so (Afshar et al., 2017).

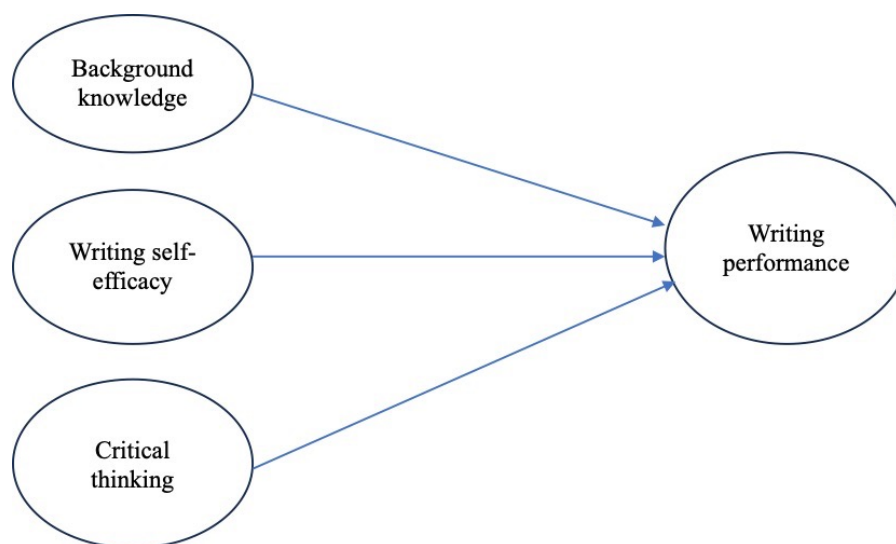
Studies on teaching English as a Foreign Language (EFL) and ESL have concentrated on self-efficacy, motivation, as well as writing anxiety (Armendaris, 2009; Jebreil et al., 2015; Mahyuddin et al., 2006; Salem & Al Dyar, 2014), amongst other studies. However, very few studies have examined writing using the three elements mentioned above in one study in Malaysia, particularly with MUET students. To close the research gap, this study looked at the critical thinking, writing performance, writing self-efficacy, as well as background knowledge (BK) of Malaysian MUET students. The present study's research aims are outlined in the following section.

## RESEARCH OBJECTIVE

This research aims to examine the effects of background knowledge, writing self-efficacy, and critical thinking on students' writing performance in the MUET.

## CONCEPTUAL AND THEORETICAL FRAMEWORKS

Figure 1 below depicts the conceptual framework of the current research. Figure 1 clearly shows three independent variables in this research, i.e., background knowledge, writing



**Fig. 1: Conceptual framework**

self-efficacy as well as critical thinking. Lastly, 'writing performance' is the dependent variable.

Based on Figure 1, the social cognitivism theory of learning underpins this study's use of variables, especially background knowledge. Knowledge and cognitive development begin on the social level, and knowledge is constructed via learners' interactions in numerous events and participation with other learners in numerous activities (Vygotsky, 1978, p.74). According to social constructionists, students and teachers must consistently create meaning through teacher narratives, dialogues, and humor (Pakirathan, 2018). According to Pakirathan (2018), students' socially affected experiences are incorporated into their background knowledge in Second Language (L2) writing and topic knowledge for ESL students. This is critical because students must create something that is distinctive to both their studies and the social discourse in which they are engaged.

As defined by social cognitive theory (Bandura, 1997), self-efficacy is the belief in an individual's capability to finish tasks at a given moment. "People's appraisals of their capabilities to plan as well as carry out actions which are necessary to obtain specific types of results" is how Bandura (1986, p. 391) defines the relationship that exists between self-efficacy as well as writing. Empirical results in this field of study often indicate the positive impact with regard to writing self-efficacy on writing performance (for example, Golparvar & Khafi, 2021) Shah, 2011; Bruning et al., 2013). As per Zimmerman and Bandura (1994), self-efficacy in writing is associated with one's impression of academic

self-efficacy, personal objectives about the quality of one's writing, self-efficacy in relation to self-regulation (Zimmerman & Risemberg, 1997), and a preference for writing (Bruning et al., 2013). More specifically, Teng et al. (2018) discovered that the relationship that exists between linguistic self-efficacy and writing performance can be utilized to support the path from linguistic self-efficacy to writing performance. Eventually, Teng et al. (2018) can support the path from performance self-efficacy to consolidated writing performance, given the correlation that exists between this variable and the writing performance presented. On the other hand, Sun and Wang (2020) observed that self-efficacy possesses an impact on writing success while using English.

Critical thinking is described as "intellectual abilities and skills" in which people can apply relevant information as well as techniques from previous experiences to new problems and situations (Bloom et al., 1956). Bloom and colleagues described six stages of critical thinking in 1956, which can be applied to any cognitive learning experience. This taxonomy progresses from basic subject understanding to more complex or advanced stages of critical thinking, culminating in advanced reasoning based on the studied concepts. Among the most difficult things for students is to develop ideas in writing. Writing ideas down entails logical thinking – the capacity to reason logically and shape an opinion. Hence, students who have not acquired the habit of exercising critical thinking have difficulty generating innovative ideas in writing.

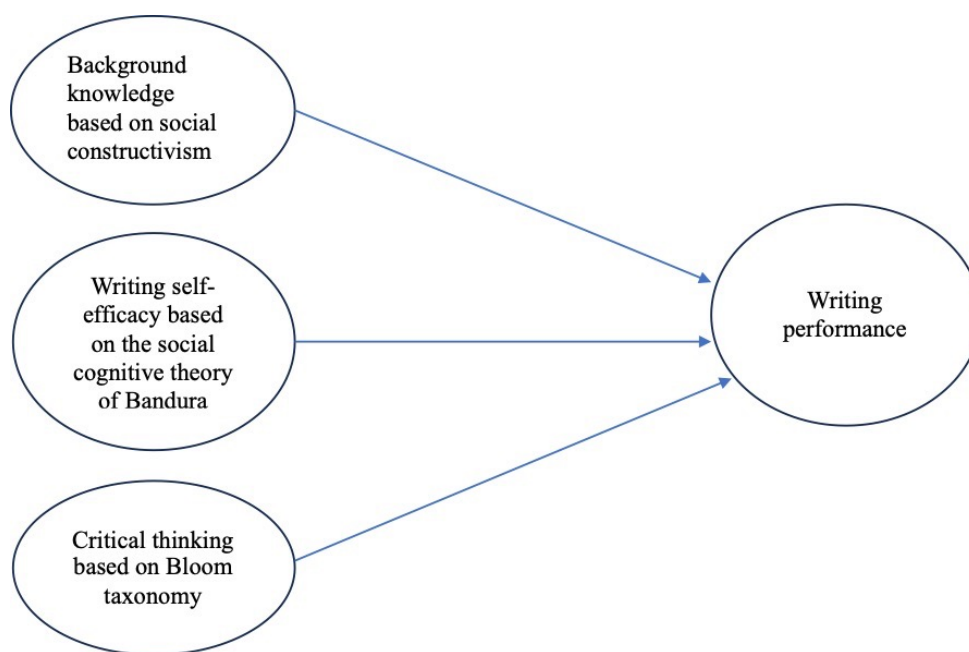


Fig.2. Theoretical framework

## LITERATURE REVIEW

### Background Knowledge

Essay topics are among the factors that may affect writing in an L2 and require special consideration since they initiate as well as direct the writing process that results in samples for evaluation (He & Shi, 2012). Consequently, Field-Gustilo and Magno (2015) state that knowledge of the content, subject, or topic is essential to writing success. Bachman and Palmer (1996) claimed that the phrase “topical knowledge,” also known as “content knowledge,” “prior knowledge,” or “background knowledge,” generally refers to “knowledge structures in long-term memory.” Other than that, the phrases content knowledge, prior knowledge, topical knowledge, and background knowledge, which are used somewhat conversely in the literature, have been distinguished by several researchers.

This study focuses on background knowledge, which Field-Alexander, Schallert, Alexander et al. (1991) define as the connection between an individual’s past knowledge and the particular content of a passage. Background knowledge is essential in learning because it allows us to use new perspectives. Furthermore, Pakir-nathan and Kepol (2018) cited that it is critical because students must produce writing unique to their subjects and the social discourse in which they find themselves. It has been observed that students’ socially constructed experiences are carried over into L2 writing background knowledge and ESL students’ background knowledge.

### Writing Self-Efficacy

Bandura (1997) and Schunk and Pajares (2010) concluded that self-efficacy influences people’s decisions, objectives, encouragement, determination, and expected outcomes. According to a social cognitive view, self-efficacy represents a generative competence where one’s motivational, cognitive, emotional, as well as behavioral skills need to be linked skilfully in order to accomplish a variety of objectives (Bandura, 2006). Hence, even though a student has previously achieved excellent results, it may be inferred that a student with low self-efficacy can quickly alter his confidence when challenged with a task.

Bandura (1997) argued that strength is crucial to remember when assessing self-efficacy. As per Bandura and Schunk, (1981), strength means “how robust the sense of self-efficacy is in an individual”. Bandura (1997) further added that people confident in their abilities view difficult jobs as hurdles one must overcome rather than risks to be avoided. Such a positive outlook promotes interest and enthralling activity participation (Pajares, 1995). In short, one of the

most effective methods to assess a person’s capability for a certain performance is to attempt it. Consequently, Bandura (1997) stated that in a wide variety of domains, self-efficacy beliefs have been shown to predict academic performance substantially, as well as writing also benefits from that. Bruning and Kauffman (2016) determined the reasons behind writing self-efficacy by citing psychologist Albert Bandura’s and other researchers’ findings. The importance of examining self-efficacy in writing lies in accordance with Bandura’s theory of observed self-efficacy. A child’s self-assessment of their writing efficacy can influence their future writing proficiency.

### Critical Thinking

Among the variables that may influence L2 writing performance, critical thinking is definitely crucial in 21<sup>st</sup>-century learning. According to Bloom et al., (1956), critical thinking is described as “intellectual abilities and skills” in which people can apply relevant information and techniques from previous experiences to new problems and situations. On the other hand, Bloom and his colleagues described six stages of critical thinking in 1956, which can be applied to any cognitive learning experience. This taxonomy progresses from basic subject understanding to more complex or advanced stages of critical thinking, culminating in advanced reasoning relying on the studied concepts.

Critical thinking has become particularly relevant in the information age when people are constantly bombarded with information. The cultivation of critical thinking in higher education has been promoted globally in recent years. Markle et al., (2014) claimed that it is a component of the tertiary curriculum that has piqued the interest of assessment organizations. Alternatively, Huitt (1998) added that when confronted with a problem, analytical thinking allows people to critically interpret and rely on knowledge and evidence.

Among the most difficult things students face is developing ideas in writing. Writing ideas down entails logical thinking – the capacity to reason logically and shape an opinion. Students who have not acquired the habit of exercising critical thinking have difficulty generating innovative ideas in writing. Examiners can glean a great deal about another person from their writing. Note that students’ dependency on teachers has been greatly reduced by providing a set of cognitive resources that encourage them to use modern approaches, for instance, critical thinking. Though critical thinking has been ignored, language teachers and scholars have not paid sufficient attention.

### Writing Performance

Writing is frequently contrasted with performance, sometimes considered divergent and at odds. Instead of viewing writing



and performance as two different methods for different activities portrayed in the textbooks, Harris et al. (2016) argue that writing and performance are parts of the same body and propose that if performance is an inscriptional practice, writing is also a physical practice. It is a making, creative, and critical practice. These are not particularly disputable aspects of creative writing, especially performance writing. Hence, the task of writing is not only to translate what students think about a proposed subject; it also helps students to build and assess their knowledge. Woolfolk Hoy et al. (2013) emphasized the significance of writing development to assist students in conveying and performing their knowledge. Thus, writing performance is an important area to look into.

Since writing performance is significant, students should be provided with ways to improve their writing skills. According to Harris et al. (2016), writing performance and problem-solving concerning the definition of writing and performance are both associated since writing is considered an act of performance. As a result, it is important to emphasize certain methods and techniques that are capable of assisting students enhance their writing skills.

## METHODOLOGY

This research employed a survey design that applies the quantitative method. It looks at how background knowledge, writing self-efficacy, and critical thinking impact students' writing performance.

### Participants

According to Krejcie and Morgan (1970), 400 Semester 2 MUET students from 26 schools in Penang, Malaysia, were randomly chosen for this research, depending on the simple random sampling technique.

### Instruments

The instruments used for data collection are questionnaire surveys (to measure the effects of background knowledge, writing self-efficacy, and critical thinking) and a writing task to assess writing performance. The research instrument has been divided into five sections: Section A is related to the demographics of the respondents, which was constructed by the researcher and consists of gender, location of school, language used at home, email address, and parents' occupations. Sections B to D are the research variables, namely L2 writer self-efficacy, background knowledge, and critical thinking.

### Writing Task

The writing topic has been selected due to its familiarity and openness. Note that topic familiarity affects the quality of

critical thinking. Field Stapleton (2001) states that a known topic generates better critical thinking. Additionally, familiar topics allow students to utilize their background knowledge of the subject to their advantage (Indah, 2017).

Following were the subject and participant directions: During English Week at your school, the head prefect gave a speech that you attended. The head prefect remarked: We are less social now thanks to social media. Do you agree with the statement?

Student essays must be at least 250 words long. Students will be given 50 minutes to complete this task. Consequently, the work of each student was evaluated by an experienced MUET teacher utilizing the Malaysian Examination Board's Standard Assessment Criteria. Similarly, essays will be assessed according to a few criteria that fall under these categories. The first is task fulfilment, and the second is language and organization. Here, task fulfilment would mean whether the writer has fulfilled the task given. Correspondingly, language and organization are related to the writer's organization of their ideas and how they present their ideas in writing. Note that the maximum score is 60 points.

## QUESTIONNAIRE

A questionnaire on L2 writer self-efficacy, background knowledge, and critical thinking, adapted from three instruments, has been used in this study.

### Second Language Writer Self-Efficacy Scale (L2WSS)

The L2 Writer Self-Efficacy Scale (L2WSS) was created to assess the multidimensional structure regarding self-efficacy in EFL/ESL writing and will be used in this study (Teng et al., 2018). The L2WSS includes 20 items to assess self-regulatory efficacy, linguistic self-efficacy, as well as performance self-efficacy, which have been developed and evaluated utilizing various thorough validation techniques. It bridges Self-Regulated Learning (SRL) theory with social cognitive theory. Moreover, the survey's 20 items yielded a 0.95 Cronbach's Alpha internal reliability coefficient after validity and reliability tests were conducted on the questionnaire.

### Background Knowledge

The interaction between both test takers' prior knowledge as well as the subject of a task is seen in the current study as a complicated process that cannot be assumed or predicted. The background knowledge questionnaire was completed to determine the relative degree of topic-related background

knowledge (Khabbazbashi, 2017). Items 1, 3, 4, 5, and 7 of the questionnaires were carefully worded to emphasize familiarity with the subjects, thoughts that could be used, having something to iterate, as well as interest in the subject matter, which were more performance-independent. Here, eight questions made up the questionnaire, with five possible answers: 1 for strongly disagree, 2 for disagree, 3 for uncertain, 4 for agree, and 5 for highly agree. Cronbach's Alpha internal reliability coefficient of the survey, which included eight questions, was calculated as 0.94 as a result of validity as well as reliability evaluations of the questionnaire.

## Critical Thinking

The questionnaire items will be adapted from the Critical Thinking inventory developed by Sarigoz (2012). The survey consists of 21 questions on a five-point Likert scale: (1) never, (2) rarely, (3) sometimes, (4) often, and (5) always. The questions include 'I can detect, illustrate, and clarify the problems in a topic' and 'While a topic is explained, I can analyze it by considering the data related to that topic.' The questionnaire's validity and reliability evaluations revealed a Cronbach's Alpha internal reliability coefficient of 0.94 for its 21 questions.

## STATICAL ANALYSIS AND RESULTS

The two-phase method (namely, 'structural model assessment' as well as 'measurement model assessment') introduced by Henseler et al. (2009) was established to best present Partial Least Squares Structural Equation Modeling (PLS-SEM) results (Hair et al., 2013).

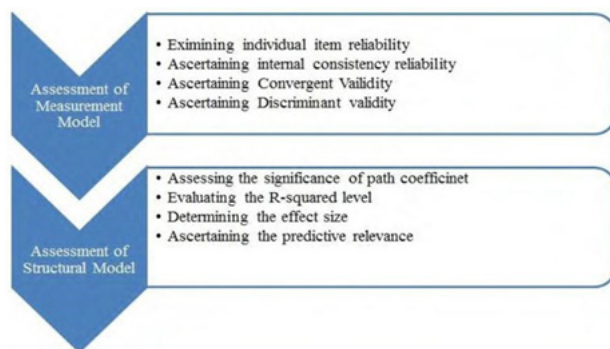


Fig. 3. Two-Step PLS-SEM (Hameed et al., 2018)

## Measurement Model

Examining a number of entities is necessary to assess the measurement model, such as Composite Reliability (CR), Cronbach's Alpha, discriminant validity, factor loadings, as well as Average Variance Extracted (AVE). Subsequently, this

model's results are displayed in Table 1 and Figure 4, which also display the factor loadings for each variable. It is essential to note that to demonstrate convergent validity, factor loading values must be more than 0.5 (Hair et al., 2010). Every factor loading value for every variable in the current study is satisfied. To be more exact, the range of values is 0.50 to 0.80. Convergent validity is therefore proven.

In the current paper, we highlighted Cronbach's Alpha, CR, as well as AVE, which are listed in Table 1, which indicates that external loading values are higher than 0.85 (Ursachi et al., 2015). Nevertheless, some of the external loadings of the currently proposed variables are less than 0.70, which is also acceptable as per Hulin et al. (2001) and Hair et al. (2020) recommendations. Furthermore, the Cronbach's Alpha of the current study is between 0.800 and 0.946 (see Table 1 for more details). Additionally, the CR of the current study is greater than 0.70, representing that CR values fulfill the Fornell and Larcker (1981) and Hair et al. (2020) recommendations criteria. Consequently, AVE values are greater than 0.50. As per Fornell and Larcker (1981) recommendations, the AVE values of the current study are above 0.50. Hence, Table 1 shows that the measurement model is approved, demonstrating the data is eligible for testing the final hypotheses.

The metrics were assessed for discriminant validity to ascertain whether they exhibited comparability or independence. Various approaches, such as the Fornell-Larcker as well as Heterotrait-Monotrait (HTMT) ratio criteria, have been suggested in previous research for evaluating discriminant validity. Both methods were deemed effective, but the HTMT ratio, increasingly endorsed by journal editors Sarstedt et al. (2019), is gaining popularity in research. This study examined discriminant validity following Sarstedt et al. (2019). Table 2 presents HTMT values for all reflective major structures, confirming the absence of multicollinearity issues. Therefore, we evaluate the proposed model's validity, reliability, and discriminant validity associated with the impact of writing self-efficacy, background knowledge, and critical thinking on writing performance.

Table 2: Discriminant Validity

Main Constructs	1	2	3	4
Background knowledge				
Critical thinking	0.627			
Writing performance	0.203	0.274		
Writing self-efficacy	0.674	0.459	0.178	

Note: 1 = Background knowledge, 2 = Critical Thinking, 3 = writing performance, 4 = Writing Self-Efficacy

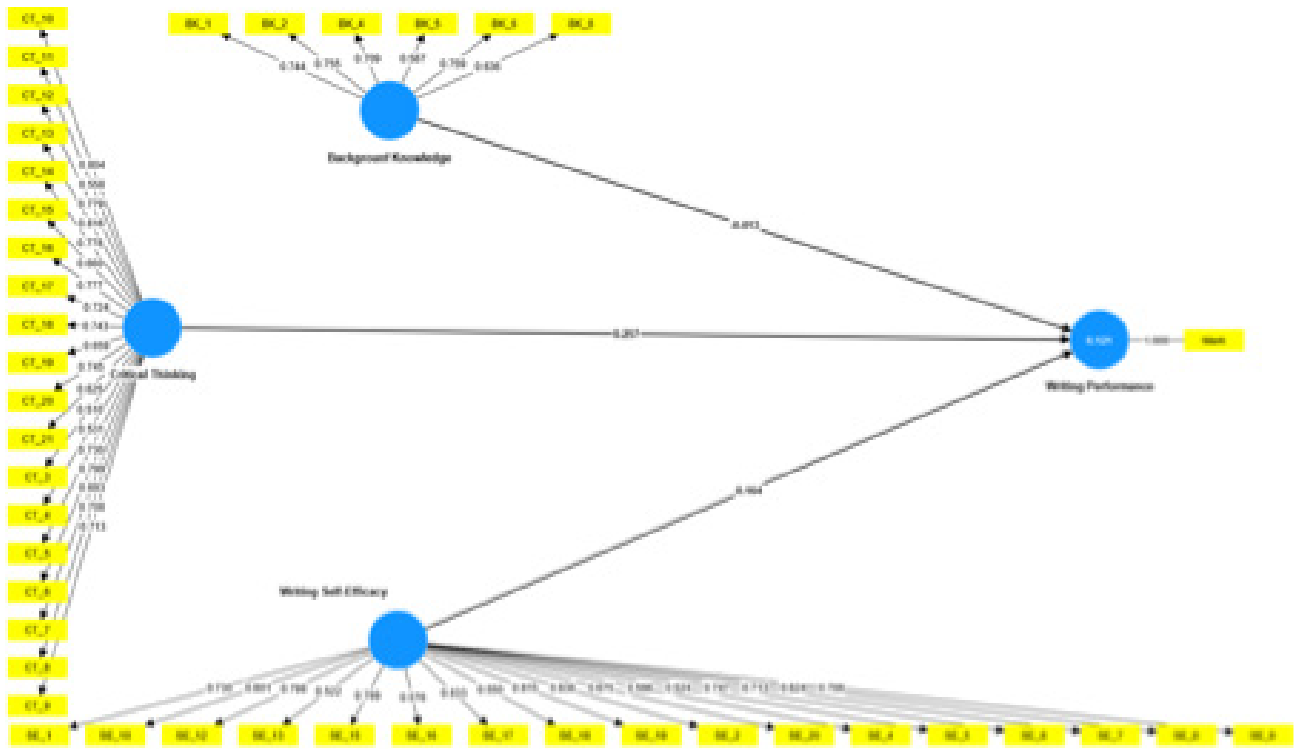


Fig. 4: Measurement model

Table 1: Convergent Validity

Main Constructs	Items	Loadings	Cronbach's Alpha	CR	AVE
Background Knowledge	BK_1	0.744	0.800	0.852	0.492
	BK_2	0.755			
	BK_4	0.709			
	BK_5	0.587			
	BK_6	0.759			
	BK_8	0.636			
Critical Thinking	CT_10	0.804	0.945	0.95	0.502
	CT_11	0.558			
	CT_12	0.779			
	CT_13	0.816			
	CT_14	0.778			
	CT_15	0.66			
	CT_16	0.777			
	CT_17	0.724			
	CT_18	0.743			
	CT_19	0.659			
	CT_20	0.745			
	CT_21	0.625			
	CT_3	0.51			
	CT_4	0.531			

Main Constructs	Items	Loadings	Cronbach's Alpha	CR	AVE
	CT_5	0.73			
	CT_6	0.799			
	CT_7	0.693			
	CT_8	0.708			
	CT_9	0.713			
Writing Performance	Mark	1	1	1	1
Writing Self-Efficacy	SE_1	0.73	0.946	0.946	0.513
	SE_10	0.801			
	SE_12	0.798			
	SE_13	0.522			
	SE_15	0.789			
	SE_16	0.576			
	SE_17	0.833			
	SE_18	0.55			
	SE_19	0.815			
	SE_2	0.836			
	SE_20	0.675			
	SE_4	0.596			
	SE_5	0.524			
	SE_6	0.747			
	SE_7	0.713			
	SE_8	0.824			
	SE_9	0.706			

Note: CR = Composite Reliability, AVE = Average variance Extracted.

Following the completion with regard to the initial phase of PLS-SEM, which involved evaluating the measurement model, the subsequent step involved assessing the structural model. This assessment encompassed the examination of path coefficients ( $\beta$  values), t-values, the Coefficient of Determination ( $R^2$ ), as well as Predictive Relevance ( $Q^2$ ). The significance related to path coefficients was established through the bootstrapping method with 5,000 resamples. The findings affirm the acceptance of all hypotheses except the first one.

Table 3 explains the main hypotheses results, which represent that background knowledge possesses an insignificant effect on writing performance ( $\beta = 0.018$ , p values > 0.05, t value 0.145). Therefore, the Effect Size ( $f^2$ ) is 0.00. Critical thinking possesses a positive as well as significant effect on writing performance ( $\beta = 0.279$ , p values < 0.05, t value 3.728), and the  $f^2$  is 0.138. Furthermore, table 3 explains that writing self-efficacy possesses a positive and significant effect on writing performance ( $\beta = 0.204$ , p-value

**Table 3. Hypotheses Testing**

Hypotheses	$\beta$	STDEV	T stat	P values	UCI	LCI
Background Knowledge -> Writing Performance	-0.018	0.093	0.145	0.442	-0.178	0.124
Critical Thinking -> Writing Performance	0.279	0.069	3.728	0	0.173	0.4
Writing Self-Efficacy -> Writing Performance	0.204	0.093	1.767	0.039	0.055	0.36

Note: UCI, Upper-Level Confidence Interval, LCI, Low-Level Confidence Interval



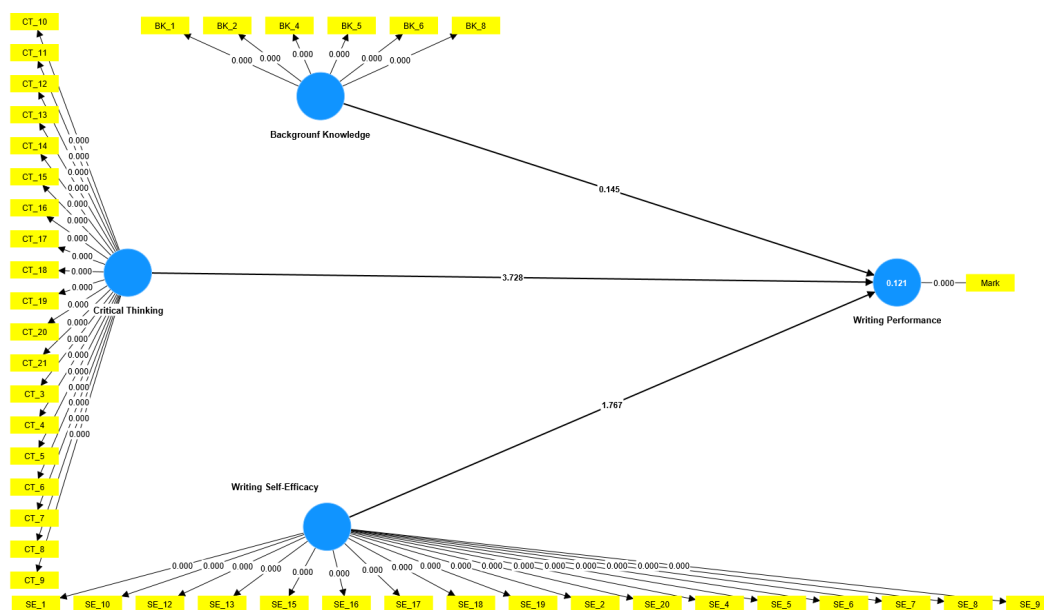


Fig. 5: Structural model

$< 0.05$ ,  $t$ -value 1.767), and the  $f^2$  is 0.083. Hence, background knowledge, critical thinking and writing self-efficacy explain a 12% variance ( $R^2$ ) in the writing performance. Table 3 and Figure 2 illustrate that the second and third hypotheses are supported. However, the first one is rejected.

## DISCUSSION

An evaluation of the structural model was utilized to find the effect. It has been demonstrated by the results that background knowledge has no significant effect on students' writing performance,  $BK \rightarrow WP$  ( $\beta = 0.018$ ,  $p > 0.05$ ). The study's findings on critical thinking parallel Khabbazzbashi (2017). According to Khabbazzbashi (2017), test-takers' language task performance did not seem to be correlated with their level of prior content knowledge. In a high-stakes speaking test, Khabbazzbashi (2017) examined the impact regarding the topic as well as background knowledge on spoken performance. Results indicated that the study's topics often displayed statistically unique difficulty measures concerning two of the three task types. According to the subject separation indices, topics for Task Types A, B, as well as C could be categorized into difficulty strata of 1.34 ( $r=.36$ ), 4.24 ( $r=.90$ ), and 3.38 ( $r=.84$ ), respectively. The variations in topic difficulty, however, were too little to affect scores significantly. The participants' performance was found to be systematically impacted by their varying levels of prior knowledge. These statistically significant differences, meanwhile, also did not seem to be practically significant.

However, this study's findings do not align with this prevailing trend. In four previous studies examined (Gustilo

& Magno, 2015; He & Shi, 2012; Meihami et al., 2018; Tedick, 1990), close familiarity with the subject influenced writing performance. Gustilo and Magno (2015) discovered that topic knowledge and linguistic knowledge ( $\chi^2=288.21$ ,  $df=126$ ,  $\chi^2/df=2.28$ ) possess both direct and indirect effects on writing performance as a result of the text production process.

We discovered that writing self-efficacy possesses a significant effect on students' performance in writing,  $SE \rightarrow WP$  ( $\beta = 0.204$ ,  $p < 0.05$ ). This finding is consistent with findings from other researchers conducted by Pajares and Johnson (1996), Pajares et al. (2000), Pajares et al. (2001), Sun and Wang (2020), Teng et al. (2018), Zabihi (2018), Raoofi and Maroofi (2017), Chea and Shumow (2014), and Shah et al. (2011). Among the motivational factors that have been studied, the most reliable predictor of writing performance is self-efficacy, as demonstrated throughout the study (Pajares & Johnson, 1996).

In addition, Bandura (2006b) posits that self-efficacy belief possesses a significant impact on motivation, affect, cognition, as well as behavior, as outlined within the theoretical framework of the social-cognitive theory. Individuals who believe that they can complete specific tasks were found to exhibit a greater propensity for active involvement in these tasks, as well as an increased expectation of success. This inclination towards increased effort and persistence remained steadfast even when confronted with assignments of a demanding nature. The study conducted by Shah et al. (2011) showed a noteworthy positive correlation ( $M = 3.2467$ ,  $SD = 0.5710$ ) between writing performance as well as self-efficacy. On the other hand, Raoofi and

Maroofi (2017) established a significant relationship that exists between writing performance and four categories of writing strategies: metacognitive ( $r = 0.45$ ), cognitive ( $r = 0.43$ ), affective ( $r = 0.38$ ), and effort regulation ( $r = 0.34$ ). The four motivational constructs included in the study were cost, attainment value, intrinsic value, as well as self-efficacy. Note that writing achievement was shown to be strongly and positively connected with writing self-efficacy ( $r(242) = .15$ ,  $p < .05$ ) and writing mastery goal orientation ( $r(242) = .11$ ,  $p < .05$ ). These findings were obtained by Chea and Shumow (2014).

Alternatively, Teng et al. (2018) discovered that there were small to moderate correlations between the three dimensions with regard to self-efficacy and writing performance, with self-regulatory efficacy possessing the lowest correlation ( $r = .117$ ,  $p = .047$ ) and linguistic self-efficacy having the highest correlation ( $r = .381$ ,  $p < .01$ ). Zabihi (2018) examined the direct and/or indirect impacts on the Complexity, Accuracy, and Fluency (CAF) of writings produced by L2 learners of various cognitive (working memory capacity) and affective (writing anxiety and writing self-efficacy) variables. The  $R^2$  for L2WC was highest for writing self-efficacy ( $\beta = .39$ ,  $p < .001$ ,  $R^2 = .15$ ,  $f^2 = .18$ , medium ES). WMC ( $\beta = .38$ ,  $p < .001$ ,  $R^2 = .14$ ,  $f^2 = .16$ , medium ES) and WA ( $\beta = -.26$ ,  $p < .001$ ,  $R^2 = .07$ ,  $f^2 = .08$ , small ES) also directly predicted L2WC. In a scenario where college students are studying EFL, Sun and Wang (2020) investigated the relationship that exists between writing SRL strategies, writing self-efficacy, and writing competency. Writing self-efficacy and proficiency were strongly positively correlated, with a Pearson correlation coefficient of  $r = 0.47$  and  $p < .001$ .

The study's findings on self-efficacy do not parallel those of Khojasteh et al. (2016), Hashemnejad et al. (2014) and Al-Mekhlafi (2011), who discovered that the student's writing performance and writing self-efficacy did not indicate statistically significant correlation. The findings could differ due to the different methodologies utilized in those studies. SEM was utilized in this study, whereas the above study used Pearson product-moment correlation.

Additionally, it has been discovered that students' writing performance is significantly impacted by critical thinking,  $CT \rightarrow WP$  ( $\beta = 0.279$ ,  $p < 0.05$ ). The results are aligned with past research showing that students' writing performance is significantly impacted by critical thinking. The noteworthy results could be attributed to the failure to account for the proficiency of MUET students. In addition, the study was conducted in a Malaysian context, and the SEM methodology used in this study would have made a difference. Afshar et al. (2017), Putri (2018), Nikou et al. (2015), Saputra (2018), and Saedpanah and Mahmoodi (2020) found that critical

thinking offers an important role in improving students writing performance. Afshar et al. (2017) discovered a strong relationship that exists between Iranian EFL learners' writing and critical thinking skills. Multiple regression and correlation analyses were the primary statistical techniques used. The findings showed that among L2 participants, writing and critical thinking have a substantial correlation ( $L2(104) = .321$ ,  $p < .01$ ).

With a correlation coefficient of .695, Putri (2018) determined a significant positive relationship that exists between students' argumentative writing and critical thinking abilities. The  $p$ -value was (.000) less than the significance value (.000 < .005). Regression analysis was performed since there was a substantial correlation. Critical thinking abilities thus contributed 48.4% to the student's ability to write argumentatively. To summarize, there was a relationship between critical thinking abilities and argumentative writing capabilities, with critical thinking contributing 48.4% of the students' argumentative writing abilities.

The study's result by Nikou et al. (2015) demonstrated that writing quality and critical thinking abilities are positively correlated. The writing quality of intermediate EFL students is correlated with analysis at 0.32 degrees, evaluation at 0.50 degrees, and inference at 0.35 degrees. Additionally, Saputra (2018) discovered a strong association ( $r = .796$ ) between students' writing achievement as well as critical thinking skills. Additionally, having an  $R^2$  of 63.4%, there was a strong impact of students' critical thinking on their writing achievement. In conclusion, the research conducted by Saedpanah and Mahmoodi (2020) demonstrated a noteworthy positive correlation between L2 writing proficiency and the application of writing strategies ( $N = 100$ ,  $r = 0.52$ ,  $p = 0.00$ ) as well as between L2 writing performance and critical thinking ( $N = 100$ ,  $r = 0.69$ ,  $p = 0.00$ ).

However, Aprilia et al. (2022) and Pei et al. (2017) discovered that critical thinking had no effect on students' writing skills, which is in contrast to the study's findings. Pei et al. (2017) examined the relationship that exists between argumentative writing in critical thinking and EFL among Chinese undergraduates and discovered that critical thinking abilities were lacking among Chinese undergraduate English majors. The participants' critical thinking skill scores ranged from 19 to 43, according to descriptive data; 88% of them had weak critical thinking skill (<34). Note that only 9% and 3% of them had average (34–40) and strong (>40) critical thinking skill, respectively. Despite the lack of a substantial correlation between their critical thinking skill and EFL argumentative writing abilities, Aprilia et al. (2022) established the connection between students' critical thinking abilities and their argumentative essay writing performance. Although the

effect is indirect, the results point to the relevance of critical thinking abilities in students' performance when writing.

## CONCLUSION

The present study provided empirical evidence for the hypothesized relationships in PLS-SEM using Smart PLS 4.0. Among these hypothesized relationships in the present study, two direct relationships were significant: Students' writing performance is strongly influenced by their writing self-efficacy and critical thinking abilities. Nevertheless, one direct relationship in the PLS-SEM was not significant, which went against the study's hypotheses. This included the non-significant relationship between background knowledge and writing performance.

This study showed that students' writing performance may be significantly predicted by background knowledge, writing self-efficacy, and critical thinking. This study can expand our knowledge of the roles played by affective (writing self-efficacy) and cognitive (background knowledge and critical thinking) components in L2 writing performance. More significantly, this study's findings will contribute to the limited body of knowledge regarding the impact of affective and cognitive aspects on students' writing skills. Furthermore, these results may give us a new understanding of the significance of background knowledge in particular. Particularly in the context of Malaysia, the significance of the cognitive and emotive components in writing performance could be seen as a noteworthy contribution to L2 writing literature. The study yielded the following potential practice recommendations:

Teachers ought to be informed and reminded of the influence of cognitive and affective factors on students' writing performance. One of the main challenges in helping L2 learners become better writers is helping them thoroughly understand the L2 writing process and teaching them useful writing techniques. Instructors should make L2 students aware of the importance of background knowledge, writing self-efficacy, and critical thinking. They should also provide practice that helps students reach greater performance levels in writing. On the other hand, background knowledge has a direct impact on students' writing abilities. Teachers should encourage their students to stay updated on advancements in many fields since it would be advantageous. Implementing reading logs as a mandatory component of English courses could broaden students' understanding of the globe.

In the same vein, English teachers should enhance student's self-efficacy. Indeed, teachers must aid learners and empower them to enhance their self-efficacy. This can greatly contribute to the overall quality of language learning

experiences. Pajares (2002) stated that a method for teachers to enhance students' self-efficacy in an academic environment is by utilizing peer modeling. Observing a high-achieving student with similar characteristics can instill a positive outlook on one's talents, substantially impacting students' self-efficacy.

## RECOMMENDATIONS

Referring to the study's analysis results and the effectively developed model, a suggestion for more research is made. In addition, several aspects need to be paid attention to improve the quality of research in the same field in the future. First, questionnaires and essay writing are the only research instruments used in this study. Therefore, the feedback received from the respondents depends on their sincerity and honesty in answering the questionnaire and their seriousness in writing essays that impact the research findings. Thus, future research is recommended to use other types of research instruments.

In addition, this study combines three factors, namely background knowledge, writing self-efficacy, and critical thinking, as predictors of Malaysian MUET students' writing performance. Hence, the findings and results of this research can only be used and generalized to MUET students in Penang. Therefore, the next researcher can study the improvement of writing performance using other variables discovered in the theory of L2 writing and using students from other countries where English is the L2.

Replicating the research is the subject of the third recommendation. It is suggested that the current study be repeated with a bigger sample size in other states and more trustworthy instruments to establish the findings' validity as well as generalizability. This replication would also confirm the potential impact of affective and cognitive factors on writing performance, as conceptualized in the present study.

Although several research studies have studied the effect of writing self-efficacy, critical thinking, as well as writing performance, a lack of research focusing on students' background knowledge was determined. This contributes to a difference in their writing performance.

Writing is often seen as a cognitive and emotional activity, demonstrating a strong association with affective factors, which include self-efficacy and motivation. This research suggests that fostering confidence in students in their ability to write can be supported by offering constructive feedback from educators and peers. Moreover, a thorough examination of the research has been undertaken, spanning a range of theoretical, practical, and scientific implications. The model proposed for writing performance effectively

explains the various aspects influencing students' writing performance on the MUET. This methodology is anticipated to significantly advance the field of study on L2 learners' writing abilities.

## LIMITATION

Like any study, this one has limitations, although it produced important findings. First, only one writing test was the basis for the participants' writing performance. If more than one performance on various writing assignments had been achieved over a period of time, the scores would have been more dependable. This study is also expected to provide references to future studies.

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