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Beyond Linguistics: Exploring the Cognitive and Motivational Barriers to Essay Writing for Tertiary Students

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Abstract
In higher education, developing strong writing skills is crucial for students' academic and career success. Unfortunately, this important aspect of education has been somewhat neglected in the context of Maluku province. Therefore, this study, serves the crucial purpose of shedding light on the multifaceted factors that underpin the deficiencies in writing skills. The primary aim of this study is to explore the fundamental factors contributing to the deficiencies in tertiary students' writing skills. To accomplish this, we conducted a quantitative survey, selecting a random sample of 70 Moluccan local students out of 120 who were enrolled in an essay writing class. Results indicate that cognitive factors play the most pivotal role in contributing to deficiencies in writing skills, boasting a remarkably high path coefficient value of 0.846. Linguistic factors and motivational aspects closely follow, with values of 0.556 and 0.528, respectively. The deficiency in writing skills among students can be attributed to a lack of internal motivation for learning, and inadequate opportunities provided by teachers for real-life observation and learning. For effective improvement in writing abilities, students need both an intrinsic motivation to learn and consistent guidance and stimulation from educators. The process of writing not only involves linguistic capability but also a deep cognitive understanding, emphasizing the need for students to process and present their thoughts comprehensively and appealingly. Improving tertiary students' writing skills require a comprehensive approach that addresses cognitive, linguistic, and motivational factors. Implementing these implications can result in more effective teaching methods and improved writing outcomes for students.

Keywords: Barriers; cognitive; linguistic competence; literacy; motivation; writing skills

Introduction

English is globally vital in education, extending its reach to Indonesia, where it is taught from elementary to university levels as a foreign language (Kumar, 2020). Proficiency in English, encompassing both speaking and writing, is reliant on the application of effective strategies (Steber & Rossi, 2021). Writing skills, in particular, hold significance beyond the boundaries of academia, offering pathways to improved communication, critical thinking, and scholarly engagement. Many researchers have consistently demonstrated the link between proficient reflective writing and enhanced academic performance (Chien, 2010; Tsingos-Lucas, 2017; Zumbrunn, 2020).

In the dynamic landscape of higher education, the capacity to articulate ideas with clarity and persuasion emerges as an indispensable asset. Writing skills constitute a fundamental pillar of academic and professional success in higher education (Bin-Hady et al., 2020). The mastery of effective writing is not merely an academic exercise; it is a gateway to self-expression, critical thinking, and scholarly communication. As evidenced that students who possess strong writing abilities tend to excel academically (Bin-Hady et al., 2020; Tsingos-Lucas, 2017; Zumbrunn et al., 2020). Moreover, the acquisition of proficient reflective-writing skills has been consistently linked to improved academic performance. In this ever-evolving landscape of higher education, where the ability to articulate ideas cogently and persuasively is paramount, the cultivation of these skills becomes an imperative pursuit.

Essay writing has been the interest of many previous studies (Ariyanti & Fitriana, 2017; Bin-Hady et al., 2020; Toba et al., 2019). These studies amongst many other tackled essay writing from perspectives. Bin-Hady et al. (2020) explored the impact of process-genre approach in teaching essay writing to EFL Yemeni students. Ariyanti and Fitriana (2017) gauged the difficulties and language need that Indonesian EFL students require to enhance their essay writing abilities. Likewise, Toba et al. (2019) studies the problems that Indonesian EFL students encountered while indulge in comparison-contrast essays. However, two of the above mentioned studies were conducted in the Indonesian context, no study to our knowledge delves the cognitive and motivational barriers that hinder EFL students writing. Thus, such a gap motives the researcher to conduct the current study.

While the existing body of research has undoubtedly made significant strides in advancing our understanding of the various factors that influence students' writing skills, these studies have primarily focused on exploring the intricate interplay between motivational and cognitive challenges associated with writing performance (Harris & Wachs, 1986; Raoofi & Maroofi, 2017; Sabti et al., 2019; Smedt et al., 2018). Nonetheless, a critical examination of this literature reveals that there are several notable gaps in the current knowledge base. Smedt et al., (2018) explored the cognitive and motivational factors amongst elementary school students. Sabti et al. (2019) probed such factors in Iraq which is a different context of ours. Furthermore, Raoofi and Maroofi (2017) studied the correlation between self- efficacy and strategies used in writing. All the these studies were conducted in different learning contexts, which are Malaysia and Iraq. Therefore, gaps can be viewed as opportunities for further investigation such motivational and cognitive particularly in the context of tertiary education in Maluku Province.

In essence, while the aforementioned studies have provided valuable insights into the dominant factors influencing writing skills, they may not fully encapsulate the unique challenges faced by tertiary students in Maluku Province. Therefore, it is imperative that we delve deeper into

these uncharted territories to gain a more comprehensive understanding of the specific dynamics at play in this region. Such an endeavor promises to enrich our knowledge of writing skill development and contribute to more effective pedagogical strategies tailored to the needs of these students.

Literature review

Factors affecting student writing skills

Brown (2000) stated that students' writing results could be identified with two affective domains. The first domain comprises the personality or internal factors contributing to successful language learning, including cognition, motivation, and attitude. The second domain constitutes extrinsic factors such as socio-cultural variables because foreign language students bring two intersecting languages and cultures. The language ability or linguistic factor also contributes to deficient students' writing skills.

Motivation

Motivation, both internal and external, powerfully guides individuals towards specific goals (Lam & Law, 2007). In education, it's crucial, fostering student engagement and driving aspirations for success (Stark, 2019). This encompasses factors like the desire for excellence, thirst for knowledge, and future aspirations (Monard & Bal, 2013). In learning, motivation is essential for success, including internal and external factors driving engagement (Stark, 2019), such as the desire for success and hopes for the future (Monard & Bal, 2013). In language learning, motivation is key, especially for learning English as a foreign language (Thohir, 2017). It can be integrative, aiming for cultural engagement, or instrumental, focusing on goals like exam success or job attainment (Suryasa, 2017). Beyond academia, motivation's impact extends to online learning, surpassing specific strategies in predicting student success (Stark, 2019). Additionally, in areas like hotel review websites, motivation, particularly the internal drive to compare opinions, influences user engagement (Belarmino & Koh, 2018).

Attitude

Attitude, comprising one's mindset and emotional disposition, significantly influences classroom dynamics and learning results (Harmon-Jones et al., 2013). In education, students' attitudes hold substantial sway over their engagement and academic achievements. Those with a positive attitude toward learning tend to enthusiastically participate and excel (Achor, 2011). Conversely, students with negative attitudes may perceive tasks as daunting, struggle to complete assignments, and may be discouraged, hindering their subject mastery (Achor, 2011). Positive attitudes also extend their impact to the teaching and learning process. Teachers with positive attitudes inspire and motivate students, while learners with favorable attitudes tend to be more receptive to instruction and active in class (Achor, 2011). This positivity cultivates an atmosphere of collaboration and mutual respect, enhancing the overall educational experience. In conclusion, attitude is a key factor in student learning outcomes, influencing engagement, mastery, and the quality of the learning environment (Achor, 2011; Harmon-Jones et al., 2013).

Literacy

Literacy, including speaking, reading, and writing skills, significantly impacts students' thinking and learning styles (Shanahan & Lomax, 1986). In the Moluccan community, oral traditions, such as conveying folklore and historical accounts, play a crucial role in transmitting

information across generations (Jong & Leij, 1999), fostering listening, comprehension, and cultural identity (Jong & Leij, 1999). However, literacy extends beyond oral communication. Reading and writing skills empower individuals to access and process information, enriching knowledge. In the modern era, in the Moluccan community, reading and writing skills are increasingly important, allowing engagement with written texts, expression of thoughts through writing, and participation in broader communication networks. Reading is essential for knowledge acquisition and better writing skills (Ehm et al., 2019). It expands knowledge, enriches vocabulary, and enhances comprehension, forming a foundation for effective expression (Kaba & Ramaiah, 2020; Moon et al., 2019).

Cognitive

Cognitive abilities play a crucial role in the learning process and encompass various mental activities involved in acquiring knowledge and solving problems (Goel et al., 2017). Understanding and developing cognitive skills are essential in educational settings and contribute to students' overall development (Goel et al., 2017). Additionally, cognition relates to a person's ability to remember, feel, and recognize something learned (Wang & Yang, 2014). Students' cognitive abilities must be seen in applying, analyzing, synthesizing, and evaluating information (Wang & Yang, 2014).

Language ability

Language ability, encompassing speaking, reading, and writing skills, is crucial for expressing ideas and communicating effectively (Herschensohn & Young-Scholten, 2012; Levin-Zamir et al., 2017). Good language skills are essential for writing, as they enable students to adhere to acceptable English grammar rules and effectively convey their thoughts to readers (Levin-Zamir et al., 2017). Without strong language skills, students may encounter difficulties in expressing themselves and effectively communicating their ideas (Purcell-Gates et al., 2011).

Previous studies

A number of studies on writing has been reviewed. They vary between writing approach (Bulqiyah et al., 2021; Smedt, 2018), attitudes and self-efficacy (Itua et al. 2014), challenges that minimize EFL students' motivation to write (Purdy, 2012), students' writing and their autonomy (Bacha, 2002; Camacho, 2021), as well as issues concerning with pedagogy and curriculum used in writing (Naghdipour, 2016). These variables will be discussed in the following review.

First and foremost, much of the research in this area often operates on a generalized level, drawing conclusions applicable to broader student populations (Bulqiyah et al., 2021; Smedt, 2018). This approach, while valuable, may overlook the contextual nuances that are paramount when addressing the specific circumstances of university students in Maluku Province. Thus, the first gap this study seeks to address is the need for a more granular and localized understanding of writing models tailored to the distinct cohorts of university students in this region. While Smedt's work provides valuable insights, it serves as a stepping stone, prompting the necessity of exploring how these motivational and cognitive challenges manifest within the unique socio-cultural and educational landscape of Maluku Province.

Furthermore, the study by Itua et al. (2014) delves into the significance of writing attitudes and self-efficacy, particularly in middle school students, leaving a conspicuous gap in our understanding of how these factors operate within the university-level setting in Maluku Province. It is paramount to acknowledge that university students, due to their diverse backgrounds, varied

levels of English proficiency, and distinct academic goals, may experience motivational and cognitive challenges differently than their middle school counterparts.

Moreover, while Purdy's (2012) survey of U.S. college students' challenges stereotypes about student motivation, it may not provide an accurate reflection of the complexities of motivation among Maluku's tertiary students. Therefore, this study endeavors to investigate whether similar motivations and challenges exist within the Maluku context and, crucially, how they contribute to deficient writing skills.

Additionally, the current literature emphasizes the profound impact of the learning environment on English writing performance, autonomy, and motivation (Bacha, 2002; Camacho, 2021). However, the socio-cultural and pedagogical dynamics of Maluku Province may significantly differ from those in Camacho's study. Therefore, there remains a compelling gap in our understanding of whether these findings hold true in the specific cultural and educational landscape of Maluku Province.

Furthermore, Naghdipour's (2016) study reveals issues with the English writing curriculum and pedagogy but does so within a different context. To address these challenges effectively, we require a more in-depth exploration within the province itself, acknowledging the localized factors that may contribute to the deficiencies in writing skills among university students. Thus, this comprehensive investigation aspires to bridge these significant gaps by shedding light on the multifaceted factors contributing to deficiencies in writing skills among university students in Maluku Province, with the ultimate goal of providing nuanced implications for improving writing instruction tailored precisely to the region's unique needs and challenges.

Research method

Research design

This study employed a quantitative research design, utilizing valid measurements to assess students' engagement in activities such as listening, note-taking, and posing critical questions (Borgstede & Scholz, 2021). Additionally, a survey was administered to gather data on students' characteristics, opinions, attitudes, and prior experiences.

Participants

The study utilized random sampling to select a sample of 70 local Moluccan students out of 120 who were enrolled in the Essay Writing course at the English Education Study Program, Pattimura University. It is important to note that these students had previously completed the Paragraph Writing course in the preceding semester. The research was conducted during the second semester of the academic year 2021-2022.

Instruments

Data collection instruments consisted of a survey questionnaire that focused on five key variables: motivation, attitude, literacy, cognitive skill, and language ability. The questionnaire was used to gather comprehensive information about these variables from the selected student sample.

Validation of data collection instruments

To ensure the reliability and validity of the data collection instruments (CFA) was employed. This analysis encompassed various aspects, including:

- Descriptive analysis: Providing an overview of the collected data.

- Convergent validity: Assessing the degree to which different items measuring the same construct converge.
- Discriminant validity: Evaluating the ability of the instruments to distinguish between different constructs.
- Reliability test: Determining the consistency and stability of the measurement instruments.
- R-Square (R2): Examining the proportion of variance in the dependent variables explained by the independent variables.
- Q-Square: Assessing the predictive accuracy of the model.
- Effect Size (F2): Measuring the strength of the relationships within the model.
- Path coefficient hypothesis testing: Analyzing the hypothesized relationships between variables.

Data analysis

The collected data were subjected to a rigorous analytical process, including the aforementioned CFA. Subsequently, the results were interpreted and discussed to provide a deeper understanding of the findings.

Results

This section explores and reveals the fundamental factors contributing to the deficiencies in tertiary students' writing skills using data from validated data collection.

Descriptive analysis

Descriptive statistics analyze data without making generalized conclusions. They provide precise interpretation of data that is easy to be understood. This study used the average mean of each variable and obtained the following results:

Table 1. Descriptive analysis of research variables

Variable	Item Number	Mean	Mean Variable
Motivation	P1	3.57	3.53
	P2	3.41	
	P3	3.52	
	P8	3.59	
	P9	3.45	
	P13	3.54	
	P14	3.64	
Attitude	P7	3.77	3.76
	P11	3.71	
	P12	3.74	
	P15	3.58	
	P18	3.74	
	P22	3.62	
	P24	3.86	
	P25	3.86	
	P30	3.93	
Literacy	P16	4.28	3.88
	P17	4.01	

	P19	3.68	
	P20	3.29	
	P21	4.01	
	P28	3.84	
	P29	4.06	
Cognitive Skill	P4	3.84	3.72
	P5	4.07	
	P6	3.51	
	P10	3.87	
	P27	3.68	
	P31	3.70	
	P32	3.75	
	P33	3.38	
Language Ability	P23	3.59	3.55
	P26	3.51	

Table 1 presents a comprehensive overview of the descriptive analysis of research variables in this study. Descriptive statistics are employed here to offer a precise understanding of the data, facilitating its interpretation. The table provides means for each variable, allowing us to discern patterns within the data set. Notably, the motivational factor (Motivation) exhibits an average mean of 3.53, with individual item scores ranging from 3.41 to 3.64. Attitude follows closely with an average mean of 3.76, suggesting a relatively positive disposition among respondents, though scores vary across the items from 3.58 to 3.93. On the other hand, the literacy variable (Literacy) stands out with the highest mean at 3.88, indicating a pronounced emphasis on literacy skills within the sample. Finally, cognitive skills (Cognitive Skill) and language ability (Language Ability) have average means of 3.72 and 3.55, respectively, reflecting moderate levels of these attributes. The data conveys the distribution of responses across the variables, highlighting the variability in perceptions and emphasizing the importance of further investigation.

Delving into aspect of the data, these findings bear significance for educators and policymakers. The prominence of literacy skills underscores the importance of focusing on reading and writing abilities in educational curricula and interventions. The relatively high average mean for attitude suggests a generally positive disposition, which could be leveraged to foster a more conducive learning environment. Additionally, the variability in motivational scores indicates the need for tailored approaches to motivate learners effectively. Furthermore, the moderate cognitive skill and language ability scores indicate areas where targeted interventions and support may be beneficial. In essence, these descriptive statistics serve as a foundation for more in-depth analyses and inform the development of strategies to enhance educational outcomes and learner engagement in the studied context.

Convergent validity

In the assessment of convergent validity, the study examined the degree of correlation between measurements of the same construct obtained from two distinct instruments. The analysis was conducted using partial least squares (PLS) with reflective indicators, focusing on loading factor indicators measuring each construct. The loading factor represents the correlation between individual item components and construct scores (Abdillah & Jogiyanto, 2015). To establish convergent validity, the study employed the guideline suggested by Chin (1995), with a threshold criterion of outer loading exceeding 0.7 and an average variance extracted (AVE) greater than 0.5.

Items within each variable were deemed to possess sufficient convergent validity if these criteria were met. The results of the convergent validity assessment are presented in Table 2:

Table 2. Initial loading factor value

Variable	Item Number	Loading Factor	Remarks
Motivation	P1	0.715	Valid
	P2	0.788	Valid
	P3	0.878	Valid
	P8	0.758	Valid
	P9	0.609	Not Valid
	P13	0.682	Not Valid
	P14	0.793	Valid
Attitude	P7	0.707	Valid
	P11	0.781	Valid
	P12	0.739	Valid
	P15	0.656	Not Valid
	P18	0.754	Valid
	P22	0.823	Valid
	P24	0.805	Valid
	P25	0.688	Not Valid
	P30	0.557	Not Valid
Literacy	P16	0.780	Valid
	P17	0.791	Valid
	P19	0.848	Valid
	P20	0.750	Valid
	P21	0.690	Not Valid
	P28	0.871	Valid
	P29	0.798	Valid
Cognitive Skill	P4	0.676	Not Valid
	P5	0.720	Valid
	P6	0.878	Valid
	P10	0.842	Valid
	P27	0.865	Valid
	P31	0.797	Valid
	P32	0.765	Valid
	P33	0.754	Valid
Language Ability	P23	0.961	Valid
	P26	0.959	Valid

The analysis revealed variable-specific outcomes regarding convergent validity. Notably, variables such as motivation, attitude, literacy, and language ability displayed satisfactory convergent validity, as indicated by the majority of their component items meeting the predefined criteria. However, cognitive skill exhibited mixed results, with some items failing to meet the established thresholds. These findings underscore the importance of evaluating convergent validity, as it validates the consistency of measurements for each construct and informs the reliability of subsequent analyses. Consequently, researchers and practitioners can confidently interpret and utilize these measurements to make informed decisions and interventions related to the assessed constructs, fostering more robust and meaningful outcomes in the context of the study.

Table 3 provides a concise overview of the outcomes of an assessment of convergent validity through loading factor analysis. The table is organized into four distinct domains: motivation, attitude, literacy, cognitive skill, and language ability. Within each domain, several items were initially observed with loading factor values below the 0.700 threshold. To enhance the robustness of the analysis, these items underwent retesting utilizing the convergent loading factor algorithm. The results indicate that all retested items now exhibit loading factor values exceeding 0.700, affirming their validity within the respective domains.

Table 3. Final Loading Factor Value

Variable	Item Number	Loading Factor	Remarks
Motivation	P1	0.743	Valid
	P2	0.846	Valid
	P3	0.901	Valid
	P8	0.777	Valid
	P14	0.840	Valid
Attitude	P7	0.753	Valid
	P11	0.900	Valid
	P12	0.842	Valid
	P18	0.772	Valid
	P22	0.911	Valid
	P24	0.784	Valid
Literacy	P16	0.776	Valid
	P17	0.810	Valid
	P19	0.870	Valid
	P20	0.771	Valid
	P28	0.868	Valid
	P29	0.761	Valid
Cognitive Skill	P6	0.888	Valid
	P10	0.857	Valid
	P27	0.894	Valid
	P31	0.803	Valid
	P32	0.775	Valid
	P33	0.756	Valid
Language Ability	P23	0.961	Valid
	P26	0.960	Valid

In light of these findings, it is evident that the convergent validity of the assessed indicators has been successfully established. Although initially some indicators fell below the 0.700 threshold, their validity was substantiated through the rigorous re-estimation process. This outcome underscores the reliability and relevance of the indicators within their respective domains. Consequently, these validated indicators can now be confidently employed in subsequent analyses and research endeavors, enhancing the overall comprehensiveness and robustness of the assessment in question.

The study assessed convergent validity by computing the Average Variance Extracted (AVE) for each indicator. An AVE value exceeding the threshold of 0.5 signifies the presence of adequate convergent validity within the variable's constituent items.

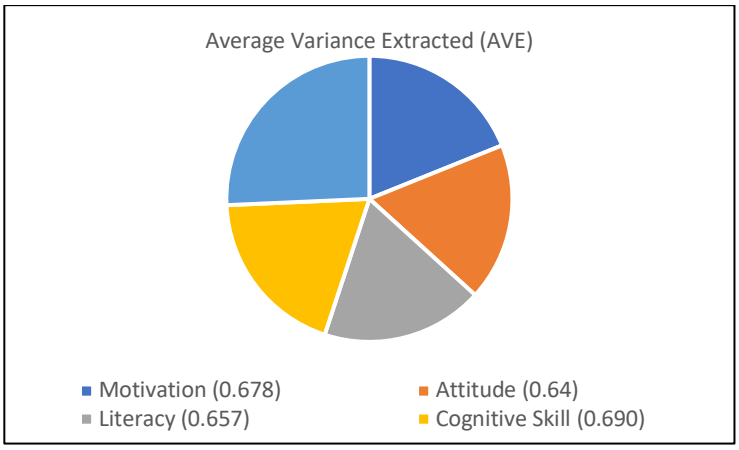

Figure 1. Average variance extracted (AVE)

The presented figure 1 demonstrates that all indicators yielded AVE values above the 0.5 benchmark, indicating the fulfillment of convergent validity criteria. This outcome substantiates the robustness of the data and underscores the reliability of the constructs under examination. Such high levels of convergent validity across the variables not only affirm the measurement precision but also fortify the significance of the findings. This validation strengthens the study's credibility and underscores the relevance of its outcomes, emphasizing their potential implications and practical applications in the field.

Discriminant validity

Related discriminant validity occurs when two different instruments measuring two predicted uncorrelated constructs produce uncorrelated scores. In the assessment of discriminant validity, the study employed cross-loading measurements for two distinct, theoretically unrelated constructs. Table 4 displays the cross-loading values for various measurement items assessing constructs related to literacy, language ability, cognitive skill, motivation, attitude, and writing ability. Each row represents a specific item, denoted as "P" followed by a numerical identifier. The columns represent the degree of correlation between each item and the different constructs being measured. Higher correlation values suggest a stronger association between the item and the respective construct.

Table 4. Cross loading value

	Literacy	Language Ability	Cognitive Skill	Motivation	Attitude	Writing Ability
P1	-0.192	0.155	0.238	0.743	0.174	0.443
P1.1	-0.192	0.155	0.238	0.743	0.174	0.443
P10	-0.420	0.223	0.857	0.193	-0.114	0.700
P10.1	-0.420	0.223	0.857	0.193	-0.114	0.700
P11	0.112	-0.069	0.097	-0.279	0.900	-0.131
P11.1	0.112	-0.069	0.097	-0.279	-0.900	-0.131
P12	-0.025	-0.048	0.146	-0.238	0.842	-0.029
P12.1	-0.025	-0.048	0.146	-0.238	-0.842	-0.029
P13.1	-0.160	0.277	0.220	0.485	0.103	0.397
P14	-0.204	0.127	0.236	0.840	0.228	0.475

P14.1	-0.204	0.127	0.236	0.840	0.228	0.475
P15.1	0.018	0.005	-0.003	-0.018	-0.521	-0.052
P16	0.776	-0.209	-0.290	-0.075	-0.084	-0.522
P16.1	0.776	-0.209	-0.290	-0.075	-0.084	-0.522
P17	0.810	-0.221	-0.253	-0.026	-0.047	-0.501
P17.1	0.810	-0.221	-0.253	-0.026	-0.047	-0.501
P18	-0.077	-0.043	0.141	-0.227	0.772	-0.018
P18.1	-0.077	-0.043	0.141	-0.227	-0.772	-0.018
P19	0.870	-0.234	-0.427	-0.323	-0.167	-0.714
P19.1	0.870	-0.234	-0.427	-0.323	-0.167	-0.714
P2	-0.157	0.087	0.155	0.846	0.218	0.392
P2.1	-0.157	0.087	0.155	0.846	0.218	0.392
P20	0.771	-0.254	-0.491	-0.279	-0.156	-0.702
P20.1	0.771	-0.254	-0.491	-0.279	-0.156	-0.702
P21.1	0.612	-0.006	-0.291	-0.042	0.025	-0.422
P22	0.109	-0.077	0.103	-0.289	0.911	-0.139
P22.1	0.109	-0.077	0.103	-0.289	-0.911	-0.139
P23	-0.296	0.961	0.407	0.197	-0.008	0.538
P23.1	-0.296	0.961	0.407	0.197	-0.008	0.538
P24	0.085	0.012	0.068	-0.051	0.684	-0.057
P24.1	0.085	0.012	0.068	-0.051	-0.684	-0.057
P25.1	0.177	0.000	0.043	-0.014	-0.472	-0.101
P26	-0.264	0.960	0.396	0.243	0.119	0.529
P26.1	-0.264	0.960	0.396	0.243	0.119	0.529
P27	-0.299	0.335	0.894	0.221	-0.001	0.700
P27.1	-0.299	0.335	0.894	0.221	-0.001	0.700
P28	0.868	-0.302	-0.459	-0.025	-0.067	-0.642
P28.1	0.868	-0.302	-0.459	-0.025	-0.067	-0.642
P29	0.761	-0.181	-0.360	-0.033	0.056	-0.540
P29.1	0.761	-0.181	-0.360	-0.033	0.056	-0.540
P3	-0.141	0.290	0.249	0.901	0.234	0.496
P3.1	-0.141	0.290	0.249	0.901	0.234	0.496
P30.1	0.080	0.013	-0.060	-0.063	-0.310	-0.096
P31	-0.416	0.235	0.803	0.337	-0.072	0.703
P31.1	-0.416	0.235	0.803	0.337	-0.072	0.703
P32	-0.348	0.455	0.775	0.077	-0.262	0.632
P32.1	-0.348	0.455	0.775	0.077	-0.262	0.632
P33	-0.515	0.510	0.756	0.124	-0.121	0.721
P33.1	-0.515	0.510	0.756	0.124	-0.121	0.721
P4.1	-0.262	0.204	0.563	0.146	-0.202	0.511
P5.1	-0.159	0.181	0.617	0.191	-0.093	0.503

P6	-0.393	0.332	0.888	0.277	-0.055	0.748
P6.1	-0.393	0.332	0.888	0.277	-0.055	0.748
P7	0.103	0.042	0.127	-0.068	0.953	-0.034
P7.1	0.103	0.042	0.127	-0.068	-0.653	-0.034
P8	0.017	0.294	0.118	0.777	0.270	0.334
P8.1	0.017	0.294	0.118	0.777	0.270	0.334
P9.1	-0.181	0.164	0.276	0.390	0.195	0.411

The values illustrate the correlations between items and constructs, and notably, each item exhibits its highest correlation with its intended construct. This observation unequivocally affirms the presence of discriminant validity within the variables. The findings from Table 5 establish the presence of discriminant validity within the examined constructs. In accordance with Hartono (2008) and Abdillah and Jogiyanto (2015), the cross-loading measurements reveal that the items exhibit the strongest correlations with their respective constructs, demonstrating that they effectively capture distinct dimensions of the underlying theoretical concepts. Consequently, these results provide robust evidence for the discriminant validity of the variables under investigation. This validation is critical in research as it ensures that the measurements accurately represent the distinct constructs, enhancing the overall reliability and credibility of the study's findings. Ultimately, the confirmed discriminant validity of these variables bolsters the significance of this research and underscores the integrity of its conclusions.

Reliability test

A comprehensive reliability test was performed to assess the adherence of each questionnaire item to established reliability standards. The purpose of this test was to ascertain the precision, consistency, and accuracy of the measurement instrument employed in this study. the reliability evaluation in PLS modeling relies on two pivotal metrics: Cronbach's alpha and Composite reliability. Cronbach's alpha gauges the lower threshold of reliability for individual items, while Composite reliability quantifies the actual reliability score, as detailed by Chin and Todd (1995) also Abdillah and Jogiyanto (2015). The outcomes of the reliability assessment, as depicted in Table 5, are as follows:

Table 5. Reliability test

Variable	*Cronbach's Alpha*	Composite Reliability
Motivation	0.880	0.913
Attitude	0.896	0.913
Literacy Culture	0.896	0.920
Cognitive	0.909	0.930
Language Ability	0.915	0.959

The outcomes of the reliability assessment affirm that all variables consistently exceeded the threshold, with both Cronbach's alpha and composite reliability values surpassing the critical benchmark of 0.7. These results confirm that the variables successfully meet the rigorous criteria of the reliability test, underscoring the robustness of the measurement instrument employed in this study and bolstering the credibility of subsequent analyses and interpretations.

The attainment of such robust reliability scores instills confidence in the data collected, establishing a solid foundation for the subsequent analytical endeavors. These findings not only serve as a testament to the meticulousness of the research design but also underscore the validity of the selected measurement instrument. Consequently, the significance of this reliability assessment extends beyond statistical rigor; it substantiates the meaningfulness of the research outcomes, thereby reinforcing the relevance and implications of the study's overarching objectives. In essence, these findings underscore the aspect of the data, as they underscore the trustworthiness and reliability of the data, consequently enhancing the scholarly value and applicability of the research results.

R- square (R2)

In evaluating the structural model using PLS analysis, we assessed the model's goodness of fit by considering R^2 values for the dependent construct and the path coefficients along with their respective t-values to determine the significance of relationships between constructs (Abdillah & Jogiyanto, 2015). R^2, denoting the variance explained by independent variables in the dependent variable, and path coefficients, indicating the significance of hypothesized relationships, were employed for this purpose (Abdillah & Jogiyanto, 2015). Notably, R^2 values exceeding 0.67 for endogenous latent variables within the structural model suggest a robust impact of exogenous variables on the endogenous ones, while values ranging from 0.33 to 0.67 characterize a moderate effect, and those between 0.19 and 0.33 signify a weak effect. Our findings, as presented in Table 6, illustrate the R-square values for each variable:

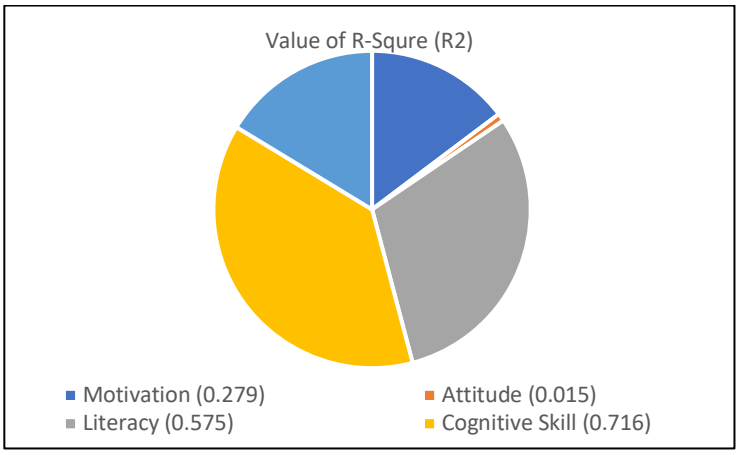

Figure 2. Value of r-squre (r2)

These outcomes reveal that the motivational, attitudinal, and language ability factors exhibit a relatively weak influence, whereas literacy and cognitive skill factors demonstrate moderate and substantial effects, respectively. These results not only provide insights into the model's adequacy but also underscore the practical significance of addressing literacy and cognitive skill factors to enhance the examined constructs.

Q-square

The study employed the Q-square test, as proposed by Ghozali (2014), to assess the model's goodness of fit and estimate its parameters. A Q-square value exceeding 0 signifies the model's predictive relevance, while a value below 0 indicates a lack of predictive power. Specifically, in the context of R-square PLS models, Q-square was used to evaluate the predictive relevance of the

model variables. The measure gauges the alignment between observed values generated by the model and the parameter estimates. In this instance, a Q-square value greater than 0 substantiates the model's predictive capability. Computationally, the Q-Square was calculated as follows:

$$\begin{aligned} Q\text{-}Square &= 1 - (1 - R^2 1) \times (1 - R^2 2) \times (1 - R^2 3) \times (1 - R^2 4) \times (1 - R^2 5) \\ &= 1 - (1 - 0.279) \times (1 - 0.015) \times (1 - 0.575) \times (1 - 0.716) \times (1 - 0.\ 0.309) \\ &= 1 - 0.059 \\ &= 0.941 \text{ or } 94.1\% \end{aligned}$$

This high Q-square value of 94.1% underscores the substantial predictive relevance of the model in this research context. It implies that the majority of the variation in the observed data can be explained by the model's variables and parameter estimates. Consequently, the study's findings hold significant implications, as they demonstrate that the model's predictions are robust and well-supported by the available data. This insight contributes to a better understanding of the relationship between the variables under investigation and provides valuable guidance for decision-making in the relevant field. Ultimately, the 5.9% unexplained variance suggests potential avenues for further research to explore external factors that may influence the outcomes, enhancing the depth of knowledge in this area.

Effect size (F^2)

In Table 6, we present the Effect Size (F^2) results, a critical metric derived from a comparative analysis of R^2 values in path model analysis, encompassing scenarios where all exogenous variables are included and when one exogenous variable is omitted. Following the guidelines established by Cohen (1988) and Santosa (2018), we interpret F^2 values of 0.02, 0.15, and 0.35 as indicative of small, medium, and significant effects, respectively. The outcomes are summarized below:

Table 6. Effect Size (F^2)

Variable	F-Square	Result
Motivation	0.387	Big
Attitude	0.015	Small
Literacy	1.353	Big
Cognitive	2.527	Big
Language ability	0.447	Big

Notably, the Effect Size (F^2) findings underscore the substantial impact of cognitive factors on writing ability, emerging as the most influential contributor within the framework of this study. Conversely, psychological factors, encompassing motivation and attitude, exhibit relatively smaller effects on writing ability. These observations bear significant implications for our understanding of the interplay between cognitive and psychological elements in shaping individuals' writing skills, highlighting the need for tailored interventions and pedagogical strategies to optimize writing proficiency in educational contexts.

Path coefficient hypothesis testing (bootstrapping)

In the path coefficient hypothesis testing utilizing the PLS bootstrapping technique, our study aimed to ascertain the significance of various relationships or paths within the model. A significance level of 0.05 was employed in our hypothesis testing, where a t-statistic exceeding the

critical t-table value indicated acceptance of the hypothesis. The results of these hypothesis tests are succinctly summarized in Table 7:

Table 7. Path Coefficient (T-statistics)

Structure Path	Original Sample (O)	T-Statistics	P-*Values*	Result
Writing ability -> Motivation	0.528	2.208	0.028	Accepted
Writing ability -> Attitude	0.122	0.449	0.654	Rejected
Writing ability -> Literacy	-0.758	1.503	0.134	Rejected
Writing ability -> Cognitive skill	0.846	5.873	0.000	Accepted
Writing ability -> Language ability	0.556	3.285	0.001	Accepted

Our findings, as presented in Table 7, are based on a significance level of 0.05 and a critical t-table value of 1.996. These results shed light on the determinants of students' writing abilities, revealing that motivation, cognitive skill, and language ability play pivotal roles in shaping these abilities. Notably, cognitive skill emerges as the most influential factor, whereas literacy appears to have the least impact on students' writing proficiency. This nuanced insight underscores the importance of cultivating motivational and cognitive aspects for enhancing students' writing capabilities, providing valuable implications for educators and policymakers alike.

Discussion

This study conducted CFA with SEM Variant based on the outer model test. The results showed five motivational, six attitude, six literacy, six cognitive skill, and two linguistic forming factors. Moreover, the inner model results showed that all dimensions of motivational, attitude, literacy, cognitive, and linguistic factors have a data variance of 94.1% on writing ability. Other variables outside this study explain the remaining 5.9%. The path coefficient results showed that the dimensions affecting writing ability are motivational, cognitive, and linguistic factors, with a $p< 0.05$. Attitude and literacy factors do not affect students' writing skills. The hypothesis test results showed that both dimensions obtained t-statistics < t table, and significance $p> 0.05$.

Cognitive factors have the most significant contribution, with a path coefficient of 0.846. They are followed by linguistic and motivational factors with path coefficient values of 0.556 and 0.528, respectively. Language is a medium functioning as a communication tool (Usman et al., 2020. Therefore, it is needed in various aspects of human life, including education. Writing skills are usually used in the learning process, where each lesson content must have an exercise and enrichment task. Beginning writing is a basic education teachers give to first and second graders. Starting to write is called handwriting, implying realizing sound symbols and writing well (Abdullah et al., 2020). According to Alsaawi (2019), the initial writing is spoken language expressions or phrases using scribbles.

As a knowledge-building tool, writing coordinates student understanding. According to Hariston in Darmadi (1996), writing activities generate new ideas and are a means for building on existing ideas and information. Furthermore, writing activities in the scientific field make people active, not just information recipients, and they develop the ability to organize and clarify concepts or ideas (Tosuncuoğlu, 2018). Cognition implies acquiring knowledge, including awareness, feelings, or recognizing something through experience. Moreover, cognitive abilities are appearances resulting from the processes of acquiring knowledge through experience. The cognitive domain includes mental or brain activities, indicating the ability to think critically and to think abstractly (ALMamari and Traynor, 2021).

Writing is a complicated cognitive process considered more difficult than reading (Tsoupikova et al., 2019). People that read well may not necessarily write well, though reading ability is a determinant of being a good writer. This means that good readers must master other skills to become excellent writers. People with good writing skills disseminate thoughts, views, and ideas in a productive, interesting, and easy-to-understand manner. There is a need for more good writers because their thoughts that contribute to developing various aspects of life become widespread. In the cognitive process, writing activities occur circularly and recursively in the writers' minds. This mental process drives or manifests observable behaviors known as pre-writing, drafting, revision, and sub-editing. A description of each stage is insufficient for a complete understanding of writing. In line with this, writing is a cognitive process comprising the task environment, the writer, and the writing stages. The author must build arguments and determine the direction of the concept and ways of thinking to choose the discourse structure needed to accommodate both directions.

Determining the structure of discourse in writing, such as argumentation, description, exposition, or narrative, is influenced by cognitive strategies and the writing process. Cognitive psychology-based studies and writing theory highlight the importance of these two components in understanding the nature of writing (Jingxin & Razali, 2020). The cognitive strategy theory focuses on writing as a problem-solving process, while the writing process theory emphasizes the creative discovery aspect of writing. Nevertheless, background knowledge plays a crucial role in facilitating the discovery and reflection processes in the pre-writing and revision stages of writing. Writers with a strong foundation of background knowledge are more likely to engage in optimal discovery and reflection processes (Jingxin & Razali, 2020).

Determining the structure of discourse in writing, such as argumentation, description, exposition, or narrative, is influenced by cognitive strategies and the writing process. Cognitive psychology-based studies and writing theory highlight the importance of these two aspects in the writing process. The cognitive strategy theory focuses on problem-solving in writing, while the writing process theory emphasizes creative discovery (Kobayashi & Rinnert, 2012). In many cases, students lack motivation to learn and find the teaching and learning activities tedious and unattractive. The traditional teacher-centered approach to learning, where lectures dominate the classroom, may contribute to this lack of motivation (Jingxin & Razali, 2020). Students may also have a lack of interest and motivation in specific areas of writing, such as poetry, due to limited exposure and opportunities to explore this genre (Jingxin & Razali, 2020).

To address these challenges, teachers should adopt approaches, methods, techniques, and learning models that promote active, innovative, creative, effective, fun, and meaningful learning experiences for students (Jingxin & Razali, 2020). It is crucial to create a learning environment that supports the development of students' psychological factors, such as interest and motivation. This can be achieved by incorporating activities outside the classroom and providing opportunities for students to explore and engage with writing in a more authentic and meaningful way. Additionally, recognizing and rewarding students' efforts and achievements can positively impact their motivation and encourage them to produce quality work (Jingxin & Razali, 2020).

Intrinsic and extrinsic motivation from students and teachers have an essential role in learning. It changes enthusiasm, giving them confidence and the desire to learn. The two factors motivating students to learn are internal and external motivation (Filgona et al., 2020). Internal motivation arises from the self-awareness of the importance of learning to develop oneself for the future. External motivation could be stimuli other people give that influence a person's psychology to realize high learning outcomes. Low motivation causes students to realize poor learning

outcomes and vice versa (Nur'aini et al., 2020). The forms of motivation include goals, student abilities, and physical and spiritual health conditions (Wardani et al., 2020). Learning is carried out intentionally and consciously to gain concepts, knowledge, and understanding to change a person's behavior. Achieving these objectives requires motivation, interpreted as students using their power in all learning activities. The teacher's role in stimulating motivation is necessary to increase students' motivation to learn (Marisa, 2019). The learning process enables a person to gain knowledge and is important for everyone. This process requires encouragement or motivation to overcome cognitive, affective, and psychomotor problems.

The success or failure in writing is because teachers do not teach diction using existing rhymes. This makes the students confused regarding the use of rhymes, which requires good teacher guidance. Furthermore, the role of the media is needed to improve students' understanding of writing and develop their abilities and knowledge (Puspitarini & Hanif, 2019). Learning to write requires teacher stimulation to improve rhyme writing skills by overcoming the problem of lack of ideas (Pentury & Anggraeni, 2021) . This is because students need varied learning models and methods and support from the school and teachers. Using learning models for writing positively impacts students' abilities (Dewira et al., 2019). Therefore, writing skills could be improved by conducting lessons according to the plan.

Conclusion

This study shows that cognitive, linguistic, and motivational factors influence the lack of writing ability of local college students in Maluku province context in learning English as a foreign language. The writing process is a cognitive activity that also involves cognition ability. To connect the cognitive and the cognition process during writing, students should aware that it requires understanding and the ability to disseminate thoughts, views, and ideas about various things in a productive, interesting, and easy-to-understand manner. The causes of students' deficiency in writing skill are (1) the lack of interest and motivation for students towards learning; and (2) the lack of opportunity provided by the teacher to explore more real learning objects they can observe. For students to acquire competence in their writing skills, they must have the motivation to learn from within as well as the continuous stimulation from their teacher during the learning process.

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