# WRITING APPREHENSION AND WRITING SKILLS AMONG ENGLISH-MAJOR STUDENTS: A CORRELATION-BASED APPROACH

# Tran Thi Minh Phuong<sup>1</sup> Email: ttmphuong.khoann@uneti.edu.vn

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Abstract: This study investigated the relationship between students' writing abilities and writing anxiety using two separate instruments: a questionnaire for assessing students' writing anxiety and a writing test using descriptive texts to evaluate students' writing skills. The target population for this study was the English department students of the University of Economics-Technology for Industries (UNETI), and it employed a quantitative correlational research methodology. In order to select a representative sample and represent the population, the researchers also used a correlational approach and cluster sampling. The researchers chose 35 second-year English major students from the second semester to serve as the sample for one class, which they used to conduct the analysis. The researchers found a negative link between students' writing skills and writing anxiety, and they came to the conclusion that r = -0.642 was the association between the two. The more often students worried about writing, the worse their performance was on writing assessments, according to the inverse correlation. It can also be concluded that there is a significant relationship between students' writing proficiency and their level of writing apprehension.

Keywords: writing apprehension, writing skills, majoring students, a correlational approach

#### I. Introduction

English is becoming more widely used in daily life in Vietnam. Language is necessary for humans to communicate with one another. Language also refers to the capacity for written and verbal communication with another individual. English is for international science,

advertising, commerce, broadcast engineering, and diplomacy, according to Crystal (2003). It also indicates that among speakers of unintelligible dialects, English has emerged as the most widely spoken language. Castillo (2009) states that English is the best language available today since it is used by the nation to

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<sup>&</sup>lt;sup>1</sup> University of Economics - Technology for Industries

develop utility for a global language. English ought to be spoken as a second language in Vietnam as well.

According to Brown (2004), writing requires proper spelling, punctuation, and paragraphing. Writing is a challenging and intentional form of communication that is done under time constraints, linguistic resource constraints, and geographical constraints (Fareed et al., 2016).

Writing is harder than speaking, listening, and reading. As a result, many students are unclear on where to start (Nunan, 2003). Writing demands more consideration and work. The word "apprehension" and the distinction between it and anxiety were first used by Daly and Miller (1975). Anxiety is situational, but apprehension is a dispositional emotion. Every student has writing anxiety when it comes to writing. One of the students' writing issues is said to be their fear of writing. This anxiety manifests as concerns about whether the work is worthwhile to read and about whether it will be mocked, laughed at, or dismissed as poor writing.

Writing skill development is linked to the phenomenon of writing anxiety. One aspect of English that students need to master is writing. In comparison to students with low levels of anxiety, individuals with high levels of apprehension typically have a smaller vocabulary. They write with less variety in their vocabulary, for example, and use fewer words overall and in fewer phrases.

In light of the aforementioned issues, the purpose of this study is to ascertain the degree of students' writing anxiety, students' writing proficiency, and the relationship between writing

proficiency and writing anxiety among English department students at UNETI. "Is there any correlation between writing apprehension and writing skill of the second - year English majored students?" is the research question that directs the investigation.

#### **II. Literature Review**

# 2.1. Definition of correlation

According to Tan (2014), correlational research is a useful technique for determining the correlations between two or more variables. A statistical method for determining and examining the degree of relationship between two variables is correlation. The correlation's direction is determined by the correlation's sign, which can be either positive or negative (Zou, Tuncali, & Silverman, 2003).

# 2.2. Definition of apprehension

The term "apprehension," coined by Daly and Miller (1975), refers to the inclination to put off writing when assignments call for it and to become anxious when a teacher assigns one. The idea of "Writing Apprehension" is based on the notion that while some people struggle with writing and detest it, others find it more natural and enjoyable. This thought includes apprehension. Writing anxiety may be connected to evoking particular feelings, according to Larson (1985), especially when written work is going to be assessed. Furthermore, a relationship between writing anxiety and personality traits, profession choice, academic success, and self-esteem was discovered by Daly and Wilson (1983). Writers' views and emotions are divided into two primary groups (Alnufaie & Grenfell, 2013): dispositional feelings and situational sentiments.

Consistent feelings, such as avoidance-related attitudes that result from a writer's bad attitude and make the writer feel blocked or otherwise troubled when writing, are known as dispositional feelings. Furthermore, situational sentiments include things like unease when writing. According to Alnufaie and Grenfell (2013), there is a difference between the feelings of apprehension and anxiety. Apprehension is a dispositional feeling, while anxiety is a situational feeling.

# 2.3. Definition of writing

Different experts define writing in different ways. According to Rivers (1981), writing is the sequential expression of new ideas or the dissemination of new knowledge. Brown (2001) also argued that writing is a form of thought. In addition, he asserts that prior to publication, writing can be organized and subject to an infinite number of modifications. According to Elbow in Brown (2001), writing is a two-step process. Finding the meaning and putting it into words are the first two steps.

Sakkir et al. (2016) assert that writing converts spoken words into written language. In order for the reader to comprehend the writer's message, it necessitates an active process of thought organization, formulation, and development on the written page. Writing also requires exact and accurate terminology, capitalization, punctuation, grammar, and spelling. Students are able to incorporate crucial auxiliary sentences into the body of their written work. Students who possess this skill will be able to correctly improve their grammar, including the use of noun phrases, articles, tenses, and adjectives. As the definition

above suggests, writing talent comprises learned and applied abilities based on one's knowledge. Writing effectively makes use of this skill.

# 2.4. Previous studies on ESL writing

To understand the cosmos of ESL writing anxiety, an inventory named the Second Language Writing Inventory, or SLWAI, was developed by Cheng (2004). This inventory helps classify writing anxiety in a second language into three types of anxiety, which are somatic, cognitive, and avoidance behavior, while investigating the respondents' levels of writing anxiety as well. Specific measures and methods have been taken to ensure the reliability of the inventory, where Cheng (2004) records 0.91 on the Cronbach alpha measure. In other studies, Arindra and Ardi (2020) record 0.95, while Mulyono et al. (2020) record 0.95.

In line with the review of the related studies, much research has been carried out to determine the types, levels, and causes of ESL writing anxiety. The findings differ from one another, such as in some studies, the most dominant type of writing anxiety is cognitive anxiety (David et al., 2018; Wern & Rahmat, 2021). As for somatic anxiety, it is found to be the most dominant in some research, such as in Alfiansyah et al. (2017) and Arindra and Ardi (2020). Other studies, such as those conducted by Elif and Yayli (2019) and Mulyono et al. (2020), show a higher prevalence of avoidance behavior. When it comes to causes of writing anxiety, some researchers have also anticipated the recurring causes, such as fear of writing tests and anxiousness when writing under time constraints (Wern & Rahmat, 2021).

Relating together learners' types, levels, and causes of writing anxiety, Boonyarattanasoontorn (2017) asserted that when learners frequently experience high levels of apprehension, they may tend to seek less input, while those with lower feelings of apprehension is in a more conducive state to acquiring a second language and displays more willingness to learn the target language.

#### III. Method

#### 3.1. Research design

This study used a correlation design, which is a type of correlation research methodology (Tan, 2014). The goal of the study is to determine how the criterion variable and the predictor are correlated. Students' anxiety when writing is the predictor variable, and their writing abilities are the criterion variable. Two variables were used in this study: a criterion variable and a predictor variable. Students' fear, anxiety, and avoidance of professional and academic writing are the predictive variables. The ability of the student to write descriptive writings is known as writing competence, and the criterion variable is the student's writing skills. The population of this study is the students enrolled in the English Education Study Program at UNETI. The English study program has five classes for the 2022-2023 intake. There are 35 pupils in each class, for a total of 185 students. Using a technique known as cluster random sampling, the researchers collected a sample. Thirty-five students in the second semester made up the total sample for the study.

Thus, the following research questions are investigated in the current study:

1. What is the most dominant type of writing anxiety among majoring students?

- 2. What is the highest level of writing anxiety among English major students?
- 3. What are the main causes of writing anxiety?

# 3.2. Research instrument and technique of data collection

The data for this study were gathered by the researchers using an instrument. A writing exam and a questionnaire were employed in this study. In order to administer a written test to the participants in this study, the researchers composed descriptive text. The researchers collected data on students' writing abilities using the Brown and Abeywickrama (2010) writing evaluation rubric. Students were given the Writing Apprehension Test. Twenty-six items with a Likert-type self-report scale and five possible answers - strongly agree (1) to strongly disagree (5) - are included.

#### 3.3. Data analysis

After that, the data were examined to see if there was a meaningful relationship between students' writing abilities and writing anxiety. The researchers calculated the writing apprehension questionnaire for students and the writing exam that the raters collected based on the score methodology. After that, the researchers used descriptive analysis. The researchers used statistical analysis once the descriptive analysis was finished. To ascertain the relationship between the two variables, the researchers computed the correlation and analyzed the data using SPSS (Statistical Package for the Social Sciences) 25. The research topic about the distinction between students' writing aptitude and writing apprehension was addressed using Tan (2014)'s table. The product-moment scale discussion table was ascertained by the researchers as follows:

Table 1. The correlation of the discussion

Correlation value (r)	Discussion
0.0-0.2	Very low correlation
0.2-0.4	Low correlation
0.4-0.6	Moderate correlation
0.6-0.8	Enough Correlation
0.8-1.0	High correlation

The correlation coefficient (r) between two variables can be obtained using this formula. The researchers determined the relevance of the association between students' writing abilities and writing apprehension through the Discussion table. Ha: The main hypothesis is p 0.05. The hypothesis is accepted if the t-sig value is less than 0.05. It suggests a relationship between students' writing abilities and their fear of writing. Ho: p > 0.05 is the second hypothesis that is put out. The hypothesis is accepted if the t-sigma is greater than 0.05. This suggests

that there is no correlation between a student's writing anxiety and proficiency.

# IV. Findings and discussions

# 4.1. The normality of the test's results

The purpose of this test was to determine whether the distribution of the data was normal. The normality test for this study was conducted using SPSS 25 for Windows by the researchers. The indicator test for normalcy indicates that the data are regularly distributed if the significance value is greater than 0.05. It can be concluded that the data were not normally distributed if the significance value was less than 0.05. As shown in Table 2, the data distribution's asymptotic significance (2-tailed) was found to be normally distributed using the Kolmogorov-Smirnov Normality Test (0.200 > 0.05).

Table 2. One-Sample Kolmogorov-Smirnov Test

	One-Sample Kolmogorov-Smirnov Test		
Unstandardized Residual total number		35	
	Mean	.000	
Normal Parameter a, b	Std. Deviation	4.312	
	Absolute	.107	
Most Extreme Differences	Positive	.107	
	Negative	083	
Test Statistic		.107	
Asymp. Sig. (2-tailed)		.200c,d	

a. Test distribution is Normal.

# 4.2. The test for linearity

When determining whether or not two or more variables under investigation have a linear association, a linearity test is used to assess the data's linearity. For correlation or linear regression analysis, this is usually a prerequisite. A linear correlation exists between the two variables if the deviation for linearity is larger than 0.05; a non-linear correlation occurs if the deviation is less than 0.05.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the real value.

To conduct this linearity test, SPSS version 25 was employed. The linearity test between students' writing skills and writing fear is shown in Table 3 between the two variables.

The test for linearity was derived from Table 3. When the deviation from the linearity sign is greater than 0.05,

the two variables are considered linear. According to the study, there was a 0.078 difference in linearity between writing proficiency and writing apprehension. Given that 0.078 was more than 0.05, it was able to determine that there was a linear relationship between writing skill and anxiety.

Table 3. Test for the linearity of students' writing apprehension and students' writing skill

			Sum of	df	Mean	F	Sig.
			Squares		Square		
Writing Skill	Between Groups	(Combined)	841.102	16	52.569	4.017	.003
*Writing Apprehension		Linearity	444.423	1	444.423	33.957	.000
		Deviation from	396.679	15	26.445	2.021	.078
		Linearity					
	Within Groups		235.583	18	13.088		
	Total		1076.686	34			

## 4.3. Correlation test analysis

The association between the students' writing abilities and writing anxiety was ascertained using the Pearson product-moment correlation. Writing proficiency was the criterion variable (Y), and writing anxiety was the predictor variable (X). There are 35 samples, N=35 and N=35, with a significance level of 5%

in the distribution of the product-moment table, which equals 0.334, according to Table 4, which is based on the output table. There is a -0.642 Pearson correlation between the writing apprehension and writing skill variables of pupils. The substantial figure of 0.0000.05, as per the aforementioned criterion, signifies a noteworthy correlation between the two variables.

Table 4. The relationship between students' writing skill and their fear of writing

Correlations				
Writing skills	Pearson Correlation	658**	1	
	Sig. (2-tailed)	.000		
	N	35	35	
Writing apprehension	Pearson Correlation	1	658**	
Sig. (2-tailed)			.000	
	N	35	35	

<sup>\*</sup> Correlation is significant at the 0.01 level (2-tailed).

Consequently, the alternative hypothesis (Ha), which maintained a relationship between students' writing skills and writing anxiety, was chosen to be accepted. Given that the correlation coefficient is negative, the correlation

is inversely proportional. There appears to be a negative correlation between the frequency of writing anxiety experienced by students during their learning process and their writing competency scores. Table 4 shows the relationship between students' writing proficiency and their fear of writing.

# 4.4. Regression analysis

Prior to examining the regression analysis, the researchers computed the

correlation analysis. Table 5 below illustrates the results of the regression analysis performed to ascertain the extent to which students' writing talents mitigated their writing anxiety.

*Table 5. The summary of the model* 

Model Summary b				
Model R	R Square	Adjusted R Square	Std. Error of the Estimate	
.642a	.413	.395	4.377	
a. Predictors: (Constant), Writing Apprehension				
b. Dependent Variable: Writing Skill				

In the R Square column, the answer is 0.413 (0.413 100), or 41.3%. It implies that writing anxiety in students lowered their writing proficiency by as much as 41.3%, with variables not covered in this study influencing the remaining percentage. Karl Pearson's Pearson correlation value was found to be -0.658 with an error probability of 0.000 using the productmoment correlation method. In the event that p is 0.05, the hypothesis is verified. Alternatively, the hypothesis is disproved if p>0.05. (0.000 0.05) The likelihood value is below 0.05. It demonstrates a relationship between students' writing proficiency skill and their writing anxiety.

#### V. Conclusion

The relationship between students' writing proficiency and writing anxiety is established by this study. Two tests were administered as part of the study: one was a descriptive text writing test that measured students' writing proficiency, and the other was a questionnaire designed to evaluate students' writing anxiety. To verify the hypothesis about the relationship between students' writing proficiency and writing anxiety, a correlation study was carried out. Correlational research, according to Tan

(2014), determines correlations between two or more variables. A correlation that moves in the opposite direction for two variables is called an inverse or negative correlation. The variables move in opposite directions if there is a negative correlation between them when X increases in value and Y decreases in value.

The degree to which one influences the other is measured by the correlation coefficient, which evaluates the strength of the correlation between two variables. The stronger the negative correlation (-1) between two variables, the closer the correlation coefficient is to the value. The investigation's results indicate that the correlation coefficient is r = -0.642. There is a somewhat high correlation between students 'writing proficiency and their fear of writing. As a result, students' writing scores decrease with the frequency with which they encounter writing anxiety when studying.

Based on calculations, writing anxiety among students reduces their writing proficiency by 41.3%. Although there has been a slight decrease, students can still make great progress by the conclusion of the third semester if they

keep learning how to correctly complete assignments, unwind, and practice in their free time. Of course, parents and teachers pay attention to their students. The study's results indicate that there is a statistically significant correlation (r = -0.642) between students' writing ability and writing anxiety. This suggests 0.0000.05. Thus, it is decided to accept the Alternative Hypothesis, which claims that there is a relationship between students' writing abilities and their fear of writing. The table's (-) symbol indicates a negative correlation between students' writing proficiency and their writing anxiety. The research participants' writing proficiency and writing anxiety are negatively correlated.

The table's indication (-) showed a negative correlation between the students' writing proficiency and writing anxiety. There is a negative correlation between students' writing test performance and how often they feel anxious when learning. Daly and Miller (1975) defined writing apprehension as the propensity to put off writing when tasks call for it and to experience anxiety when a teacher assesses one's work. Researchers found that writing skill is associated with the hypothesis. There are limitations and a scope to this research; the researchers only look at the relationship between writing skills and writing anxiety. Thus, other researchers who are interested in writing apprehension might concentrate on a different factor. In particular, the researchers expect that the findings may shed light on students' writing anxiety and writing proficiency in future studies.

#### References

[1]. Alfiansyah, F., Jaufillaili, J., & Hendriwanto, H. (2017). The Analysis

- of Students' Anxiety in Learning Writing at the 10th Grade of Vocational High School. *Leksika: Jurnal Bahasa, Sastra dan Pengajarannya, 11*(2), 12. https://doi.org/10.30595/lks.v11i2.2074.
- [2]. Alnufaie, M., & Grenfell, M. (2013). EFL writing apprehension: The macro or the micro? *Journal of Arts and Humanities*, 2(3), 79-89.
- [3]. Arindra, M. Y., & Ardi, P. (2020). The correlation between students' writing anxiety and the use of writing assessment rubrics. *LEARN Journal:* Language Education and Acquisition Research Network, 13(1), 76-93.
- [4]. Atmowardoyo, H., & Sakkir, G. (2021). The Development of Language Learning Theory Based on Best Practice: A Literature Review. In Proceedings of the Tenth International Conference on Languages and Arts (ICLA 2021) (pp. 172-184). Atlantis Press.
- [5]. Badrasawi, K. J. I., Zubairi, A., & Idrus, F. (2016). Exploring the Relationship between Writing Apprehension and Writing Performance: A Qualitative Study. *International Education Studies*, 9(8), 134. https://doi.org/10.5539/ies.v9n8p134.
- [6]. Bloomfield, J., & Fisher, M. J. (2019). Quantitative research design. *Journal of the Australasian Rehabilitation Nurses Association*, 22(2), 27-30. https://search.informit.org/doi/10.3316/informit.738299924514584.
- [7]. Boonyarattanasoontorn, P. O. O. N. Y. A. P. A. T. (2017). An investigation of Thai students' English language writing difficulties and their use of writing strategies. *Journal of Advanced Research in Social Sciences and Humanities*, 2(2), 111-118.
- [8]. Brown, H. D. (2004). Language Assessment: Principles and Classroom Practices. New York: Longman.

- [9]. Brown, H. D. & Abeywickrama, P. (2010). Language assessment: Principles and classroom practices (2nd ed.). Pearson Education.
- [10]. Brown, H. D. (2001). Teaching by Principles: An Interactive Approach to Language Pedagogy. New-York: Longman.
- [11]. Castillo, M. (2009). English as an International Language: Webbased help. *American Journal of Neuroradiology*, 30 (5) 857-858; https://doi.org/10.3174/ajnr.A1516.
- [12]. Cheng, Y. S. (2004). A measure of second language writing anxiety: Scale development and preliminary validation. *Journal of Second Language Writing*, 13(4), 313-335.
- [13]. Crystal, D. (2003). English as a Global Language (2nd ed.). Cambridge: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511486999.
- [14]. Daly, J. A., & Wilson, D. A. (1983). Writing apprehension, self-esteem, and personality. *Research in the Teaching of English*, 17 (4), 327-341.
- [15]. Daly, J. A., & Miller, M. D. (1975). The Empirical Development of an Instrument to Measure Writing Apprehension. *Research in the Teaching of English*, 9 (3), 242-249.
- [16]. Daly, J. A. (1985). Writing apprehension. In M. Rose (Ed.), When a writer can't write: Studies in writer's block and other composing-process problems (pp. 43-82). Guilford Press.
- [17]. David, A. R., Azman, H., & Ming, T. S. (2018). Investigating online dialogue journal writing impacts on low proficiency students' writing anxiety. *International Journal of Language Education and Applied Linguistics*, 71-81. https://doi.org/10.15282/ijleal.v8.1051.
- [18]. Elif, G. E. N. C., & Yayli, D. (2019). The second language writing anxiety: the perceived sources and consequences. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi*, 45(45), 235-251.

- [19]. Fareed, M., Ashraf, A., & Bilal, M. (2016). ESL Learners' Writing Skills: Problems, Factors, and Suggestions. *Journal of Education and Social Sciences*, 4, 81-92. https://doi.org/10.20547/jess0421604201.
- [20]. Kolmogorov, A., & Smirnov, N. (1993). https://real-statistics.com/non-parametric-tests/goodness-of-fit-tests/one-sample-kolmogorov-smirnov-test/.
- [21]. Larson, R. (1985). Emotional scenarios in the writing process: An examination of young writers' affective experiences. In M. Rose (Ed.), When the Writer Can't Write: Studies of Disruption in the Composing Process (pp. 19-42). Guilford Press.
- [22]. Mulyono, H., Liestyana, A. R., Warni, S., Suryoputro, G., & Ningsih, S. K. (2020). Indonesian Students' Anxiety to Write in English as a Foreign Language across Gender and Educational Levels. Problems of Education in the 21st Century, 78(2), 249-262
- [23]. Nunan, D. (2003). *Practical English Language Teaching*. McGraw-Hill.
- [24]. Richards, J. C., & Renandya, W. A. (Eds.). (2002). *Methodology in language teaching: An anthology of current practice*. Cambridge University Press.
- [25]. Rivers, W. M. (1981). *Teaching foreign-language skills*. The University of Chicago Press.
- [26]. Sakkir, G., Rahman, Q., & Salija, K. (2016). Students' Perception on Social Media in Writing Class at STKIP Muhammadiyah Rappang, Indonesia. *International Journal Of English Linguistics*, 6(3), 170-175.
- [27]. Syatriana, E., & Sakkir, G. (2020). Implementing Learning Model Based on Interactive Learning Community for EFL Students of Muhammadiyah University. *ELT Worldwide: Journal of English Language Teaching*, 7(1), 24-30.

- [28]. Tan, L. (2014). Correlational Study. In W. F. Thompson (Ed.), *Music in the Social and Behavioral Sciences: An Encyclopedia* (pp. 269-271). Thousand Oaks: SAGE Publications.
- [29]. Wern, T. C., & Rahmat, N. H. (2021). An Investigative Study on the Types and Causes of ESL Writing Anxiety: A Case Study of Learners from a Chinese Independent Middle School.
- European Journal of English Language Teaching, 6(3).
- [30]. Zou, K. H., Tuncali, K., & Silverman, S. G. (2003). Correlation and simple linear regression. *Radiology, 227*(3), 617-622. https://doi.org/10.1148/radiol.2273011499.

# TRẠNG THÁI LO LẮNG KHI VIẾT VÀ KỸ NĂNG VIẾT CỦA SINH VIÊN CHUYÊN NGÀNH TIẾNG ANH: MỘT PHƯƠNG PHÁP DỰA TRÊN SỰ TƯƠNG QUAN

# Trần Thị Minh Phương<sup>2</sup>

Tóm tắt: Các nhà nghiên cứu (NNC) đã khảo sát mối quan hệ giữa khả năng viết của sinh viên và nỗi lo lắng khi viết bằng hai công cụ riêng biệt: một bảng câu hỏi để đánh giá nỗi lo lắng khi viết của sinh viên chuyên ngành Tiếng Anh và một bài kiểm tra viết sử dụng các văn bản mô tả để đánh giá kỹ năng viết của các em. Đối tượng mục tiêu của nghiên cứu (NC) tương quan định lượng này là sinh viên khoa tiếng Anh trường đại học Kinh Tế - Kỹ Thuật Công nghiệp (UNETI). Để chọn một mẫu đại diện cho toàn bộ số sinh viên tham gia, các NNC cũng sử dụng phương pháp tiếp cận tương quan và lấy mẫu theo cụm. Họ đã chọn 35 sinh viên năm thứ hai chuyên ngành tiếng Anh từ học kỳ thứ hai năm học 2022-2023 để làm mẫu cho một lớp, các NNC đã sử dụng mẫu này để tiến hành phân tích, và đã tìm thấy mối liên hệ đáng lo ngại giữa kỹ năng viết của sinh viên và nỗi lo lắng khi viết, và họ đi đến kết luận rằng r = -0,642 là mối liên hệ giữa hai yếu tố này. Theo tương quan nghịch, sinh viên càng thường xuyên lo lắng về việc viết thì kết quả đánh giá viết của họ càng kém. Cũng có thể kết luận rằng có mối quan hệ đáng kể giữa khả năng viết của sinh viên và mức độ lo lắng khi viết của các em.

**Từ khóa**: trạng thái lo lắng khi viết, kỹ năng viết, sinh viên chuyên ngành, phương pháp tiếp cận tương quan

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<sup>&</sup>lt;sup>2</sup> Trường Đại học Kinh tế - Kỹ Thuật Công nghiệp