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Lexical features and the quality of Vietnamese EFL students' online English writings

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Abstract

The rapid development of high technology and the Internet has made online learning increasingly popular, especially in the last few years when the COVID-19 pandemic appeared and spread worldwide. However, implementing online English courses in the pre-COVID-19 period was not prevalent; and only a few courses utilized new technologies to teach the English language online in universities and colleges in Viet Nam (Pham, 2020). This paper investigates 270 Vietnamese tertiary students' digital competency and online English writing study and practice experience in pre-, during, and post-COVID-19 periods. It also examines the link between the lexical features and the quality of the students' online English writing. In addition, the study surveys English teachers' perceptions of lexical features' influence on the students' online English writing quality. The study found that Vietnamese tertiary students' digital competencies are of a high standard, with plentiful experiences of using digital technology in learning and practicing English. Some students faced challenges such as performing digital devices, communicating with friends and teachers, reading guides and documents in English, or having financial issues while taking online English courses during the COVID-19 pandemic. However, most of them solved all problems quickly and effectively themselves. Moreover, the findings implicated the strong influences of lexical sophistication, lexical diversity, and language accuracy on the students' English writing quality. Finally, it showed teachers' approval for students to use English writing aids when learning or practicing writing English online because of the educational benefits and convenience they could get in online English learning sessions.

Practitioner Notes

1. The COVID-19 pandemic has changed English learning and teaching approaches in Viet Nam universities.
2. The tertiary students' digital competence and adaptability somewhat impact their online English learning and practicing process and results.
3. The common challenges Vietnamese EFL students used to deal with include performing digital devices, communicating in the online learning community for physical and spiritual support, reading digital guides in English, and financial issues when taking part in online English learning sessions.
4. The relationship between lexical features, including lexical diversity, lexical sophistication, lexical density, language accuracy, and cohesive devices and Vietnamese students' online English writing quality, need to be thoroughly examined and statistically analysed by group and time.
5. Tertiary English teachers' and EFL students' perspectives on the influences of using English writing assistant tools in students' online English writing quality should be referred to build up pedagogical principles in online English learning assessment.

Keywords

Online English Writing, Lexical Features, Quality, Digital Competence, COVID-19 Pandemic

Introduction

The rapid development of high technology and the Internet has made online learning increasingly popular, especially in the digital era of 4.0, when the COVID-19 pandemic appeared and spread worldwide. While online learning imposed itself as the best educational solution for all Higher Educational Institutions during the COVID-19 pandemic, tertiary students internationally face both opportunities and challenges in learning and adapting to this paradigm shift in the delivery of education. However, it remains unclear how students in international contexts are responding to these changes in digital learning during and post-COVID-19 (Eri, Gudimetla, Star, Rowlands, & Girgla, 2021).

In Vietnam, likewise, implementing English courses via virtual learning environments in the pre-COVID-19 period was not prevalent; and only a few courses utilised new technologies to teach the English language online in universities and colleges (Pham, 2020). As the COVID-19 pandemic occurred, the Viet Nam Ministry of Education emergency issued policies to boost digital support for schools and educators to conduct online courses in order not to interrupt the education plans during the pandemic. There has yet to be any previous research on teaching English writing online and linguistic features of English as a Foreign Language (EFL) students' online essays or writings so far. Furthermore, university English teachers in Vietnam have had different perspectives on the advantages and drawbacks of teaching and learning English in general or learning and practicing writing English online, in particular. Therefore, this paper investigates Vietnamese tertiary students' digital competency and online English writing study and practice in pre-, during, and post-COVID-19 periods. It also examines the link between the lexical features and the quality of EFL students' essays or writing in online English writing courses at several universities in Viet Nam in the last three years. In addition, the study surveys English teachers' perceptions of lexical features' influence on the students' online English writing quality and the effects of learning and practicing writing English via virtual learning environments.

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Literature Review

Digital Competence and Digital Resilience

Digital competence refers to the capacity of using digital technologies consciously and critically (Klassen, 2019), as users in public and private life (Potsch, 2019) conduct problem solving, communicating, information managing, collaborating, and effective knowledge building (Ferrari, 2012). According to Eri et al. (2021), digital resilience is defined as the ability of learners to overcome technological difficulties and persist with online learning as they adapted to the changing trends in higher education. Eric et al. (2021) examined the perceptions of 687 tertiary students from five countries (including Australia, Cambodia, China, India, and Malaysia) in the

emerging new digital learning norm via a survey with questions related to digital competence, confidence in using and adapting to digital innovation, and resilience in learning during and post-COVID-19. This study's findings revealed barriers that impact the digital transformation of undergraduate students and hence, recommended necessary teaching and learning support frameworks to enhance their digital competence and resilience.

Appolloni, Colasanti, Fantauzzi, Fiorani, & Frondizi (2021) analysed the strategic model of distance learning adopted by Italian higher education in pre- and during-COVID-19. The researchers compared two situations (before and during the pandemic) to identify best practices that can be adopted in Italy to boost their digital supply and compete in an international context. Research findings demonstrated the resilience of the Italian higher education and confirmed that distance learning also improved students' resilience.

Online learning environment and online learning assessment

Online learning is defined as education over the Internet. It is often referred to as “e-learning,” among other terms, and it includes Internet-based courses offered synchronously and asynchronously. Online learning environments offer a unique educational domain regarding the potential for interaction, participation, and collaboration (Rossi, 2010). Online assessment is the measure of learners' development through internet-based instruments. Just like online learning, online assessment can be either synchronous or asynchronous. Synchronous online assessments can be automatic scoring, feedback quizzes, simulations, or presentations. Asynchronous online assessments can be e-portfolios, reflections, projects, or assignments (Khan & Jawaid, 2020). Therefore, online assessment measures students' capacities or skill acquisition using information technology or any web-based testing instrument.

However, Gillett-Swan (2017) indicated that online learning environments present challenges for both tertiary students and teachers. Likewise, assessment in online learning contexts remains challenging due to the threat of cheating, plagiarism, dishonesty, and impersonation (Peytcheva-Forsyth et al., 2018). Turning to Al-Maqbali and Raja (2022), their study explored the assessment challenges experienced in online learning settings, and recommended choices to assist all instructive partners in setting clear benchmarks when moving to online assessment. The study's findings indicated that several serious challenges needed to be managed. These challenges included learners' refusal to turn on cameras, heavy teaching loads, cheating, the length of time required for developing online assessment instruments, impersonation/dishonesty, measuring some learning outcomes, plagiarism, grades' inflation, assessing group work, academic integrity, and large student numbers per section. In addition, the researchers suggested that academic staff refrain from conducting a single heavy-weighted strategy for summative assessment due to these serious challenges. Finally, the researcher advised academic staff to design and adapt assessment tools that require students to demonstrate skill and knowledge acquisition.

Lexical Features and English Writing Quality

According to Richards (2003), networked computer-mediated writing learning brings learners an online writing environment that comprises synchronous and asynchronous writing. Synchronous writing is written communication in real-time via discussion software on Local Area Networks or Internet chat sites with all participants at their computers simultaneously. In contrast, asynchronous online environments offer real-time conferencing between students or between students and

teachers in a virtual environment, which encourages greater peer involvement and interaction than in non-networked contexts. He indicates that synchronous online English writing classes provide users with synchronous writing discussions, online teacher feedback, and peer conferencing on texts. In general, the linguistic features examined by writing researchers fall into three large constructs: lexical, syntactic, and cohesion. These features are essential elements of discourse structures and have close links to the quality and development of English Second writings (McNamara et al., 2010).

According to Crossley (2020), lexical items are considered the most commonly used linguistic feature to analyse the quality of texts. There are three categories of lexical items: lexical diversity, density, and sophistication. The first category refers to the number of unique words in a text. The second one means the number of content or function words, and the rest includes words that are more likely found in academic texts. Lexical sophistication tends to provide the richest metrics of text quality and can be considered the proportion of advanced words in a text (Read, 2000).

Research methodology

Methods

The study attempts to find the answers to the three following research questions and target the purpose of the study:

1. How do EFL students learn and practice writing English when taking online English writing courses at universities in Viet Nam in pre, during, and post-COVID-19 periods?
2. What is the link between lexical features and the quality of Vietnamese EFL students' online English writing?
3. What are the English teachers' perceptions of students' learning and practicing writing English online and the lexical features' influence on the students' online English writing?

The study employed descriptive and comparative research methods with quantitative and qualitative approaches to investigate the lexical features and cohesive devices used in the tertiary students' online English writing. The qualitative descriptive method was used to describe the study context, the study subjects, and the participants' perspectives. The quantitative descriptive method helped the researchers collect quantitative data for statistical analysis, and figured out lexical features used in the writing samples and the writing quality via their scores. The comparative method was used to find similarities or differences in students' digital competency before and after the pandemic. It also helped compare the linguistic features in the students' initial and final writing versions and their writing quality.

Participants

This study involved 270 students and 39 English teachers from many colleges and universities across Viet Nam, participating in two surveys to get feedback on lexical features' influence on the students' online English writing quality and the effects of learning and practicing writing English via virtual environments.

Table 1

Some Details on the Study's Participants

	Names of universities	Number of teacher participants	Number of student participants	Students' majors
1	University of Science and Technology, the University of Da Nang (DUT)		88	mechanics, electricity, ICT, constructions, architecture, project management, electronics
2	University of Economics, the University of Da Nang (UED)		34	business administration, law, banking, finance, marketing
3	University of Science and Education, the University of Da Nang (DUE)		22	literature, physics, mathematics & IT, history
4	University of Foreign Language Studies, the University of Da Nang	28	45	English language, English for business, English for tourism
5	Vietnam - Korea University of Information & Communication Technology		41	computer science, electronics & computer engineering, digital economics & E-commerce
6	University of Technology and Education, the University of Da Nang (UTE)		29	industry education, electricity & electronics, construction engineering, chemistry & environment
7	School of Pharmacy and Medicine, the University of Da Nang (DSMP)		11	nursing, dental pathology, functional medicine
8	University of Quang Nam	4		
9	University of Duy Tan	5		
10	Ho Chi Minh city University of Food Industry	3		
11	University of Vinh	2		
12	University of Da Lat	2		
13	University of Quang Binh	1		
14	Ha Noi University	1		
15	University of Pham Van Dong	2		
16	Military College of Special Forces	1		
	Total	39	270	

Materials

The current study includes fifty-one online essays or writings made by non-English Major students taking different General English courses with levels A2-B2 at some universities in Vietnam (see Table 1) for the last five years. Each of these writings has two versions:

- Version one (V1) is the EFL students' initial writing drafts composed at the synchronous online studying session without using any writing-assistant tools;
- Version two (V2) is the essays or writings modified with computer writing facilities or online English writing aids.

All fifty-one writing drafts belonged to Corpus 1, and their second versions belonged to Corpus 2. Table 2 (below) presents the total words and the mean number of words per sample in each corpus.

Table 2

Total Words and Mean Number of Words per Sample in Corpus 1 and Corpus 2

	Number of samples	Number of word types	Number of word tokens	Mean number of words per sample
Corpus 1	51	1379	7420	146
Corpus 2	51	1607	9533	187

Data Analysis Instruments

In order to obtain the research data and carry out the data analysis systematically and effectively, the researchers applied three types of research instruments: software AntConc, questionnaires, and Virtual Writing Tutor software.

- Software AntConc: the study used tools Word List, Concordance, and Cluster/N-Grams to determine the frequency of lexical features in the students' online English essays or writings.
- Questionnaires: The study employed two questionnaires to get the participants' feedback on the students' digital competence and the online English writing studying and practice process. The first questionnaire for surveying student participants contained twenty-one questions classified into four categories:

1. academic information about the students, including their universities' names, their majors, and their current English levels;
2. the students' digital competence and adaptability in taking online English courses in pre-, during, and post-COVID-19 periods;

3. the students' experiences and efficacy of learning and practicing writing English online; and
4. their needs and expectations of up-coming online English writing courses at universities.

The second questionnaire for surveying English teachers had fourteen questions belonging to three categories:

1. the teachers' English teaching experience;
2. the teacher's perspectives of the lexical features' influences on the students' English writing; and
3. the teachers' perceptions of students' online English writing practice with some writing assistant tools.
4. software Virtual Writing Tutor: Essay Score and Vocabulary Checker were used to evaluate and compare the quality of the students' first and final online English writing versions.

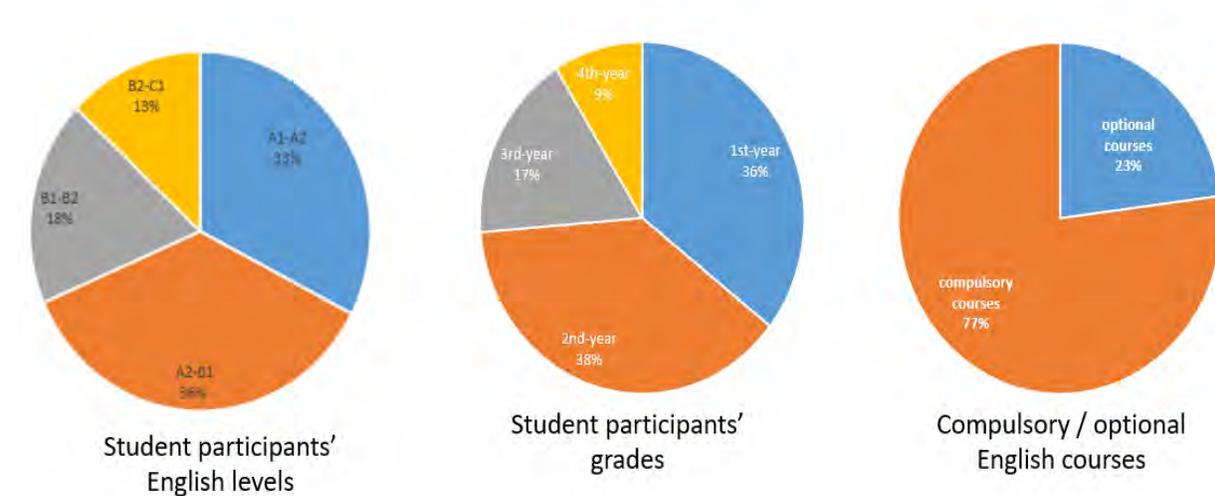
Results and Discussion

Vietnamese EFL students' digital competence and adaptability in taking online English courses before, during, and after the COVID-19 pandemic

Among 270 student participants, those with English levels of A2-B1 occupied the most (36%), and those with English levels of B2-C1 did the least (13%). The numbers of first-year and second-year students were ninety-six (36%) and one hundred and three (38%), respectively, whereas there were forty-seven third-year (17%), and twenty-four fourth-year students (9%). Most of them (77%) took compulsory online English courses, and the rest (23%) had optional ones.

Figure 1

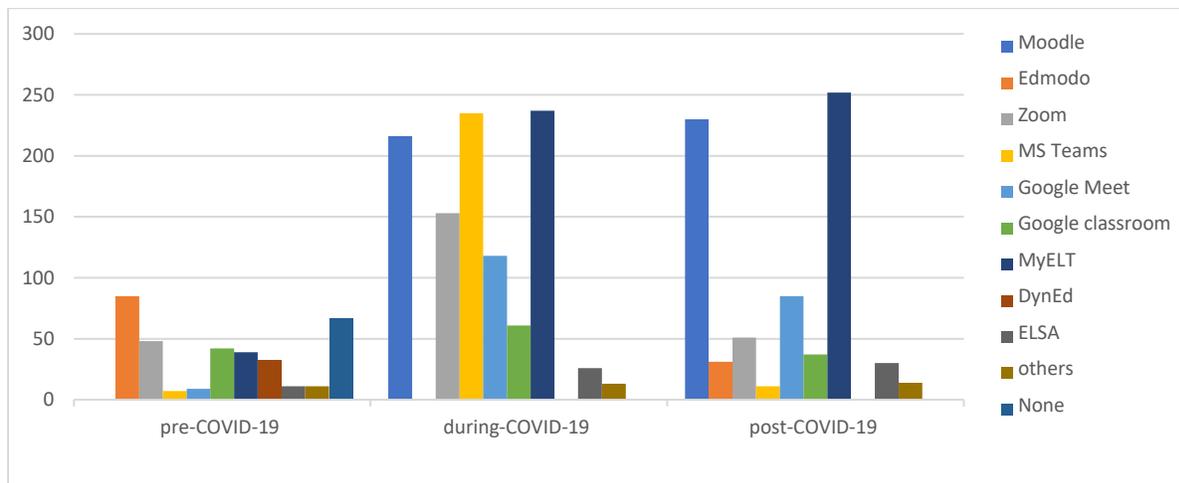
Academic Information of the Student Participants



For the questions about the digital devices and websites/software/platforms, the student often used to study English in pre-, during, and post-COVID–19 periods, the survey found that Vietnamese students often used smartphones (80-90%) and laptops (62%) to participate in online/ blended English courses during all three periods of time. In contrast, 4.4% used desktops, and only nine students (less than 1%) used tablets in pre- and post-COVID–19 periods. In particular, a few (11 student participants) did not use any digital devices to learn English before the COVID–19 pandemic. Regarding English learning websites/software/platforms, the study shows that a much higher number of Vietnamese tertiary students employed more English learning platforms/software/websites (*i.e.*, Moodle, Zoom, MS Teams, Google Meet, Google Classroom, MyELT, ELSA, Duolingo, Memrise, and so forth) during, and post-COVID–19 periods as opposed to pre-pandemic conditions. (See figure 2)

Figure 2

English Learning Software/Platforms/Websites used by Vietnamese Tertiary Students



Concerning students' digital competence, the study found that 19-21% of students had no ability, half of them could exploit basic features of some software/platforms/websites, and 22-26% could do so easily and efficiently. In addition, the survey's results showed that the students' digital competencies significantly improved over time. (See figure 3 below)

Regarding what students often dealt with when applying digital technology in learning and practicing English, nearly 19% of the students found no challenges, and 27% felt it rather difficult to perform or operate tools or features of some digital devices or software/websites. In contrast, those having challenges communicating with friends or teachers and reading technical manual guides or documents in English occupied 30-32%. Finally, 17-18% complained about the school's low-quality infrastructure or could not afford digital devices or English e-textbooks. (See figure 4)

Figure 3

Vietnamese Tertiary Students' Digital Competencies Pre-, During, and Post-COVID-19 Periods

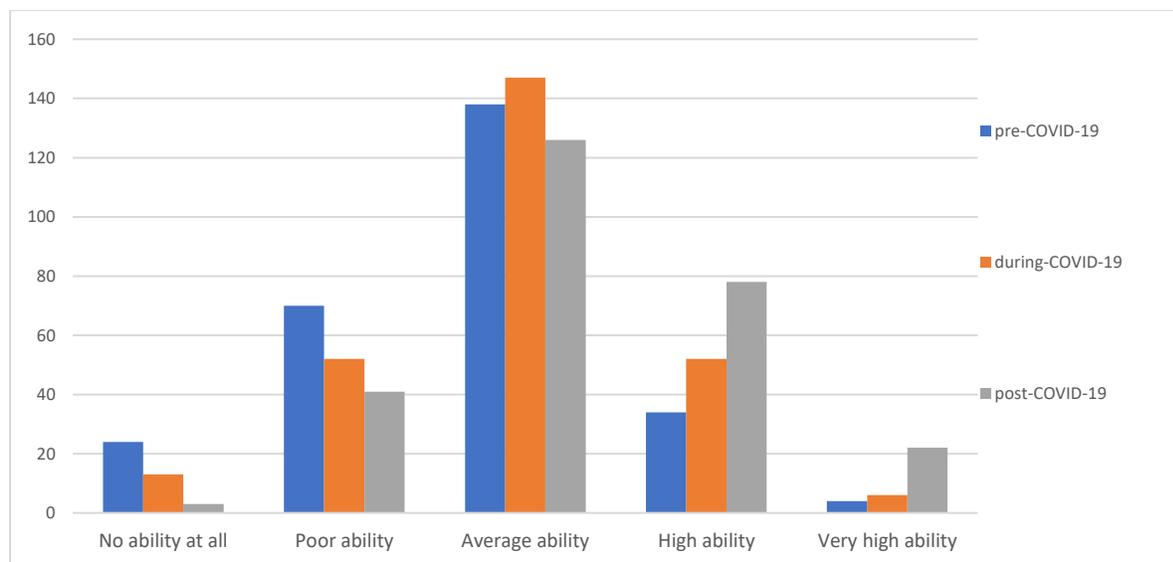
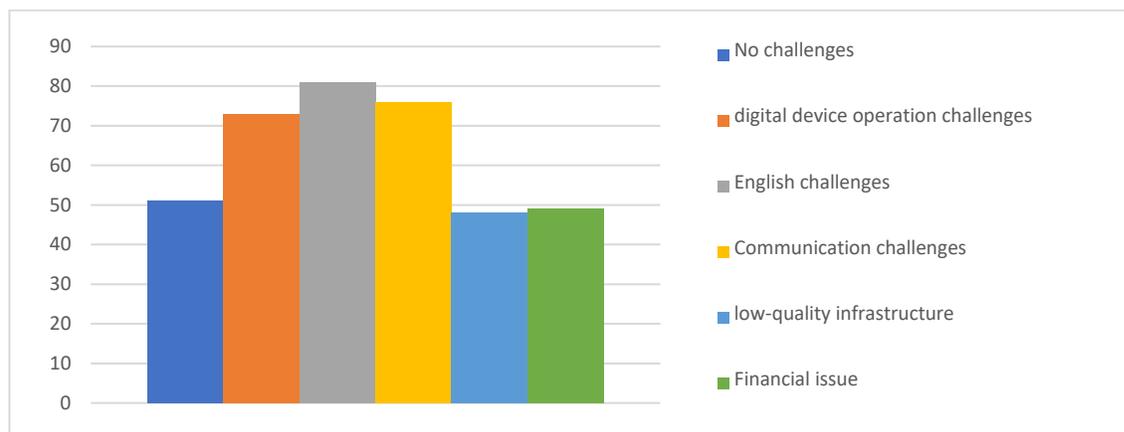


Figure 4

Challenges Students are Dealing With



However, when responding to how to overcome the challenges, 56% handled and solved problems by themselves, 25% asked their friends and relatives for help, and 19% called for the teacher or school's support. (See figure 5 below).

Figure 5

Solutions to Overcome Challenges

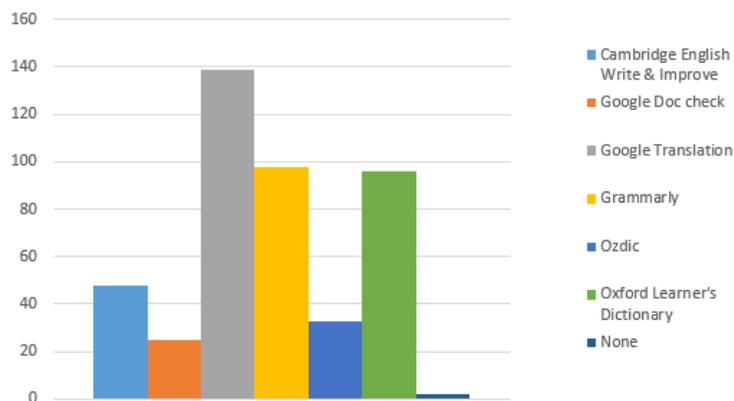


Students' experiences of online English writing study and practice

Apart from applying software/websites in taking English skill-integrated courses, most of the student participants often used several online English writing aids while learning and practicing writing English. Among the six online English writing aids presented in Figure 6, Google Translation seemed to be the most favourite tool for students, with 139 users. Following this, online Cambridge or Oxford Learner's Dictionaries and Grammarly were exploited by 97 students (36%). Software Cambridge English Write & Improve and Ozdic attracted 13-16% of the student users, and the writing facility Google Doc Check was the least favourite assistant tool for students. The survey's results showed that English Major students favoured employing online Cambridge or Oxford Learner's Dictionaries, Cambridge English Write & Improve, and Ozdic, whereas a lot of non-English Major students preferred Google Translation and Grammarly to others when learning and practicing writing English online.

Figure 6

Online Writing Aids used by Students to Learn and Practice Writing English

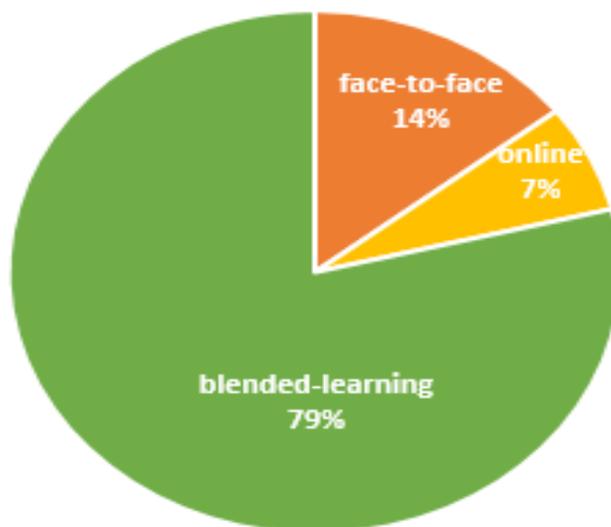


When asked to evaluate the influences of using English writing aids, many student participants indicated benefits they could get by using some tools like Grammarly, online Cambridge/ Oxford Learner's dictionaries, and Ozdic. The students believed that these online English writing aids improved their writing skills. For example, their final English writing versions contained fewer spelling and grammar mistakes, more appropriate collocations, more high-level academic words, or better and more concise sentence structures. However, some non-English major students with low English levels (A1-A2) admitted that they depended too much on some writing aids like Google Translations, Grammarly, or Google Doc Check. They would become less confident about composing in English without using these writing aids.

The benefits of using English writing aids in online learning sessions, and the number of students evaluating learning online were much more effective than the face-to-face style, which scored highest (34%). 29% agreed that the new learning trend could help them study English slightly better than the traditional way. 23% voted for the equal effectiveness of these two learning methods. Only 13% thought that online learning could be a less effective than offline. Regarding their expected learning methods in the future, however, the results showed that only 8% of the students preferred online learning, 14.5% chose to learn face-to-face, and most of them (78.7%) favoured the blended-learning method. (See figure 7).

Figure 7

Students' Expectation of English Learning Methods in the Future



Lexical features and students' English writing quality

A. Scores of the Students' Online English Essays/writings

Although 270 students participated in the survey, half followed the instructor-led online English writing practice process and submitted their initial and final writing versions. Intending to assess the students' writing objectively, the researchers chose fifty-one essays (made by non-English

Major students at levels A2-B1) among the one hundred and thirty-five students' online English writings to evaluate their quality.

As mentioned above, the tool Score Essays of the software Virtual Writing was employed to grade the fifty-one students' online writing samples. The total score of each essay was calculated based on four criteria: vocabulary (i.e., *number of words, academic words, or spoken words*), language accuracy (i.e., *number of grammar or spelling mistakes*), *structure*, and *cohesion*. Each criterion used a grade of 100, and the entire writing was assessed from zero to one hundred marks.

The tool Score Essays from the software Virtual Writing Tutor reported that the mean score of fifty-one writings V1 was 54.69, and that of V2 was 67.68. In the fifty-one writing (V1) group, twenty-five V1s (49%) were assessed higher than the group's mean score; the rest V1s had lower scores than the mean. Writing #02 got the highest score (76.00 marks), and writing #36 stood at the lowest rank with 31.75 marks.

Comparatively, in the group of fifty-one final writings (V2), twenty-two V2s (43%) had scores higher than the group's mean score. Writing #46 had the highest score (82.25 marks), and writing #31 got the lowest score (51.25 marks).

The scores of each student's online English writing Ratio word types/word tokens are presented in Figure 8 below.

Figure 8

Scores of the Fifty-One Students' Online English writings



Moreover, in comparing the students' writing between the two groups (V1 and V2), the study found thirty-seven V2s with higher scores than their V1s. Only one V2 was graded a bit lower than their initial drafts; two writing samples (i.e., #7 and #27) had both V1 and V2 with the equal scores. Generally, the final version of the students' writing had a considerably better quality than the initial one due to the more significant number of writing with scores much higher than the mean.

B. Lexical diversity and the students' online English writing quality

With the tool World Lis from the software AntConc, the researchers calculated the number of word types as presented in Table 3 below.

Table 3

Word Types and the Writing Scores

Writings' version	Number of samples	Total number of word types	Mean number of word types	The writings' mean score
V1	51	1379	27.0	54.69
V2	51	1607	31.5	67.58

Regarding the relationship between the word types and the scores, Table 2 showed that there were 1379-word types in the group of fifty-one V1s and 1607-word types in the group of fifty-one V2s. The mean number of word types in the second group was 31.5 and higher than in the first (27.0). On average, each V2 had 4.5-word types more than a V1. Of fifty-one writings in each group, there were:

- twenty-one V2s increasing over 30 word-types compared to their V1s. Seventeen got scores significantly higher than their V1s, ranging from 15 to 30 marks each. The V2s #20 and #48 scores were considerably higher, and the V2s #28 and #40 were assessed a bit higher (0.25 - 5.0 marks) than their V1s'.
- nine V2s # 5, #8, #9, #21, #25, #33, #35, #37, and #43, with word types increasing from 5 to 30 words compared with their V1s. Most of these V2s' scores were quite higher than their V1s, except for V2 #5, with 1.5 marks lower, and V2 #21, with 22.75 marks higher than their V1s.
- seven V2s (including #2, #16, #17, #18, #19, #27, and #39) had about 4 more word types than their V1s. Most of these writings had V2s assessed a bit better than the V1s. However, V2 # 27 rose four-word types but had an equal score for its V1 and V2. In contrast, V2 #39 increased only three-word types but got a score much higher (16.75 marks) than its V1.
- three writings (i.e., #3, #11, and #46) had the same number of word types in V1s and V2s. However, their V2s were relatively better than their V1s.
- although the other eleven writings had fewer word types in V2s than in V1s, only V2 #7 scored lower than its V1'; The rest showed slightly higher scores for their V2s than their V1s.

In short, word types partly influenced the students' online English writing quality. The number of word types was almost proportional to the writings' scores except for a few writings.

Regarding the relationship between the ratio of word types/word tokens and the writings' scores, Table 4 presented the highest, the mean, and the lowest ratio in groups V1 and V2.

Table 4

The Ratio of Word Types/Word Tokens and the Writings' Scores

Writings' version	Number of samples	The highest ratio of word types/word tokens	The mean	The lowest	The writings' mean score
V1	51	0.75	27.0	0.43	54.69
V2	51	0.75	31.5	0.50	67.58

Out of fifty-one writings in each version, thirty-one V2s had higher ratios, and eighteen V2s had lower ratios than the mean; In the V2 group, both V2 #13 and V2 #10 reached the highest ratio of 0.75.

When comparing the ratio of word types/word tokens between the two versions, the researcher found twenty-four V2s (including V2s #3, #4, #13, #15, #16, #17, #20, #22, #24, #26, #27, #32, #33, #34, #36, #37, #39, #40, #43, #44, #47, #50, and #51) had a lower ratio (from -0.01 to -0.15) than their V1s. Seven V2s (i.e., #2, #11, #12, #23, #31, #35, and #46) had the same version ratio (from 0.5 to 0.66). The remaining 20 writings outperformed the V2s with higher ratios than the V1s.

The ratio difference between the two versions and the writings' score revealed that the lower the ratio in an essay, the higher its score. For example, writings #26, #40, and #44 had ratio differences between the two versions ranging from -0.12 or -0.15, but the V2s' scores were much higher (22.25 - 22.24 marks) than their V1s. Two V2s were graded lower than their V1s while their ratios in the V2s were slightly higher (0.02 - 0.04) than those in the V1s. Moreover, when examining three writing samples #2, #11, and #12, which had the same ratio in both versions, the study found that their V2s' scores slightly increased (from 0.75 to 3.25 marks) compared to the V1s'.

From the above statistical results, it could be assumed that the ratio of the article did not influence the writing scores so much. Finally, the ratio of word types/word tokens was often inversely proportional to the students' online English quality of writing.

C. Lexical Density and the Students' Online English Writing Quality

With the help of the tool Vocabulary Check, the study obtained many details relating to the lexical density of the student participants' online English writing (both versions), as presented in Table 5 below.

Table 5

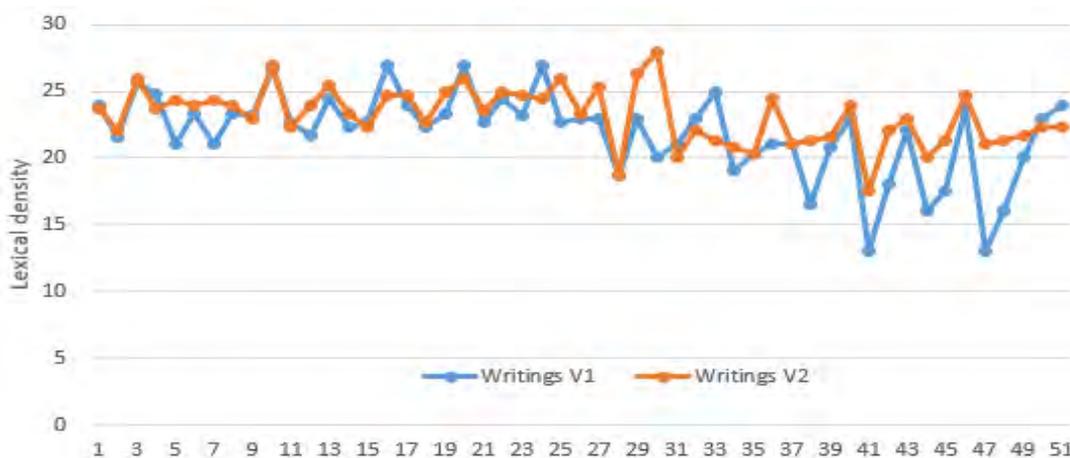
The Lexical Density of the Students' Online English Writings

Writings' version	Number of samples	The highest density	The average density	The lowest density	The writings' mean score
V1	51	27	20.58	13	54.69
V2	51	28	21.87	17.5	67.58

Concerning the relationship between the lexical density in each writing version and their scores, the researcher found that group V1's highest density was 27, the mean was 20.58, and the lowest was 13. Also, we found those of group V2, which were 28, 21.87, and 17.5, respectively. Generally, all the figures of the lexical density in group V2 were slightly higher than in group V1. The lexical density of each student's online English writing is shown in Figure 9 below.

Figure 9

The Lexical Density of Each Student's Online English Writings



In the first group, twenty-eight V1s had lexical densities higher than the average; the others owned the lower ones. In the second group, the number of V2s with lexical density higher or lower than the average was almost the same as those in group V1: the former was twenty-seven, and the latter was twenty-four.

When comparing the lexical density of the writings in two groups, the study found thirteen V2s (including #1, #4, #9, #11, #15, #16, #24, #31, #32, #33, #50, and #51) having the density lower than their V1s. However, the decrease in lexical density in V2s was not much (approximately one and a half words), and their score changed slightly compared with V1s' scores. Therefore, it could result that the low decrease in lexical density did not influence the quality of the writings.

In addition, the study found two writings (including #28 and #37) having equal lexical densities in both versions, twenty-seven writings with insignificant increases in lexical density in the second version, and nine V2s (including #29, #30, #38, #41, #42, #44, #45, #47, and #48) having lexical density much higher than their V1s. The two formers had V2s graded a little higher than their V1s. Even two V1s (samples # 5 and #7) scored a bit higher than their V2s despite the V2s' lexical density being lower than the V1s'. These figures indicated that the little increase in lexical density did not influence the writing quality. On the other hand, all nine V2s with lexical densities much higher than their V1s were graded better because their scores increased considerably (15-20 marks), compared with the V1s. In short, the lexical density had little influence on the students' writing quality, except for cases in which the lexical density increased sharply.

D. Lexical Sophistication

Based on McNamara's (2011) definition of lexical sophistication, the researchers applied the tools Vocabulary Checker and Essay Score from the software AntConc to figure out the academic words in the students' online English writings described in Table 6 as follows.

Table 6

The Number of Academic Words in the Students' Online English Writings

Writings' version	Number of samples	The total number of academic words	The mean number of academic words	The writings' mean score
V1	51	302	5.92	54.69
V2	51	462	9.06	67.58

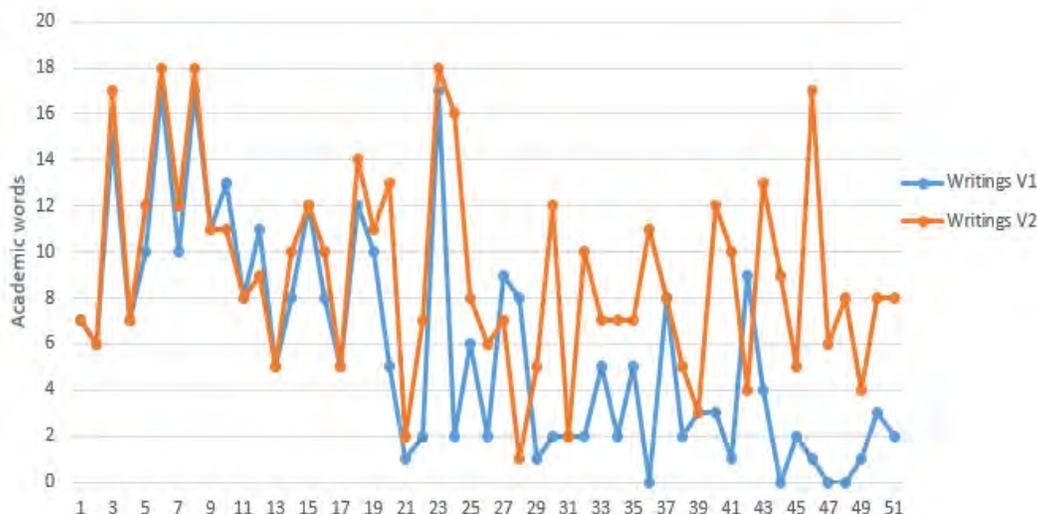
The information in Table 6 showed that the group of initial writings contained three hundred-and-two academic words, and the mean number of this lexical item was approximately six per each writing. Twenty-one of fifty-one V1s had a higher number of academic words than the mean, two V1 contained an equal academic number, and the others owned this lexical item less than the mean. There were three V1s with the highest number of academic words. Incredibly, there existed four V1s with no academic words at all.

In contrast, the total number of academic words in the fifty-one final writings was one and a half times higher than that of V1s (four hundred-and-sixty-two words). Thus, each writing V2 owned nine academic words, many more than each V1. The highest number of academic words that three V1s of this group owned was 18. In contrast, the lowest number was 1, and there existed only one V1 containing one academic word.

The number of academic words in each student's online English writing is shown in Figure 10 below.

Figure 10

Number of Academic Words in Each Student's Online English Writing (both versions)



In comparing the two groups of writings, the study found six V2s (including #10, #12, #27, #28, #36, and #42) having fewer academic words than their V1s, eleven writings (including #1, #2, #4, #9, #13, #15, #17, #19, #31, #37, and #39) with the equal academic number in both versions, and the rest twenty-four owning a higher number of this lexical item than their V1s. In detail, eleven of the twenty-four V2s had fewer academic words than the V1s; eight V2s (such as #20, #32, #40, #41, #44, #47, #48, and #51) contained considerably higher academic word number compared with the V1s; and five V2s (including #24, #30, #36, #44, and #46) with many more academic words than their V1s.

As examining the link between academic words and writing quality, the study revealed that most final writings, which had a number of academic words less than or equal to their drafts, were assessed with similar or slightly higher scores than their V1s. However, this subgroup graded three V2s (samples #14, #17, and #43) considerably higher (from 15 to 20 marks) than their V1s. There were some reasons for the assessment. Firstly, although the academic word number in the V2s was a bit lower than in the V1s, the V2s' vocabulary had more words at higher levels and fewer conversational words (spoken language) than the V1s'. Secondly, these V2s contained more provocative and field-related words than their V1s; Thirdly, the language used in the V2s was more accurate. For example, V2# 39 had only one possible typo error, while its V1 contained six language errors relating to typography, misplaced-s, punctuation, contextual spelling, and word choice.

Some V2s, such as #20, 24, #31, #36, #44, and #46, scored significantly higher than their V1s because they had more (over 10) academic words than V1s. In addition, the vocabulary in the V2

was at higher levels, more provocative and field-related than in the V1s. The vocabulary error density in V2s was usually from zero to 3%, much lower than in the V1s.

Furthermore, the study examined writing #5, which had V2's score slightly lower than its V1. It found that although there were two more academic words in the V2 than in the V1, the V2's vocabulary included some more words at low levels than the V1's. In addition, the number of provocative and field-related words, and the language error were the same in both versions. Lastly, a few more cohesion devices (i.e., *coordinating conjunctions*, *subordinating conjunctions*, and *transition indicators*) were employed in the V2, but this lexical item could not improve the V2's quality. Using academic words had a strong effect on the writings' scores. In other words, the number of academic words was proportional to the students' online English writing quality. The right word choice, vocabulary with many words at high English levels, and high language accuracy would improve English writing quality.

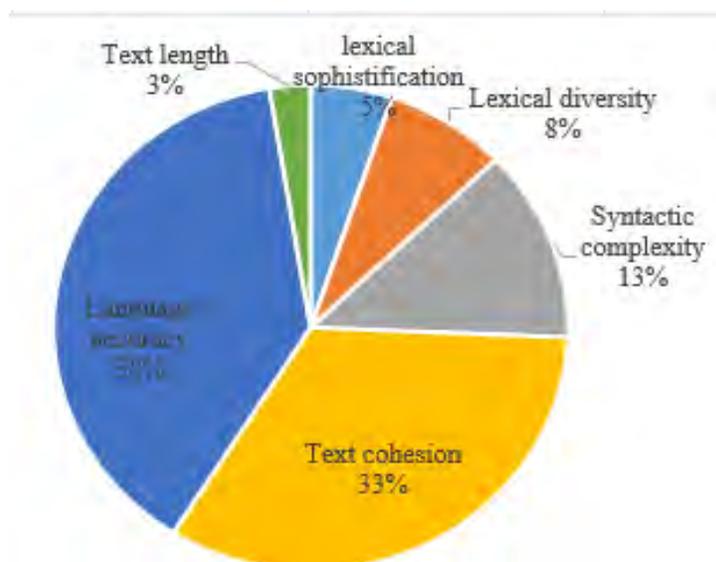
English Teachers' Perceptions of the Linguistic Features' Influences on the Students' Online English Writing Quality

Thirty-nine English teachers from the Faculty of English, Faculty of Foreign Languages, Faculty of Foreign Language Teacher Education, and Faculty of English for Specific Purposes of ten universities (as listed in Table 1) participated in the survey. All of them had extensive experience (from 8-25 years) teaching English in general, and English writing in particular, to English Major and non-English Major students with different English levels at many universities in Viet Nam. When asked what linguistic features influence the students' English writing quality, they chose all lexical items, including lexical sophistication, lexical diversity, syntactic complexity, text cohesion, language accuracy, and text length. However, language accuracy and text cohesion are the two most important factors affecting the students' English writing quality. In contrast, 13% of teacher participants thought lexical features (including lexical sophistication and density) had the most potent effects on English writing quality. (See Figure 11 below)

Regarding lexical density, 74% and 59% of the English teacher participants agreed that the number of lexical density and academic words is proportional to the English writing quality, but 21-23% of participants disagreed. About 5% of participants supported the idea that lexical density is proportional to the English writing quality in case the language was used in the English essays accurately, or the vocabulary was compatible with the essay's topic. Furthermore, five others (13%) were not for or against the idea of the number of academic words. Some teachers believed that the writing genre, the topics, or the writing contexts were vital factors in helping the writers/students employ a fair number of academic words and hence improve their writing quality.

Figure 11

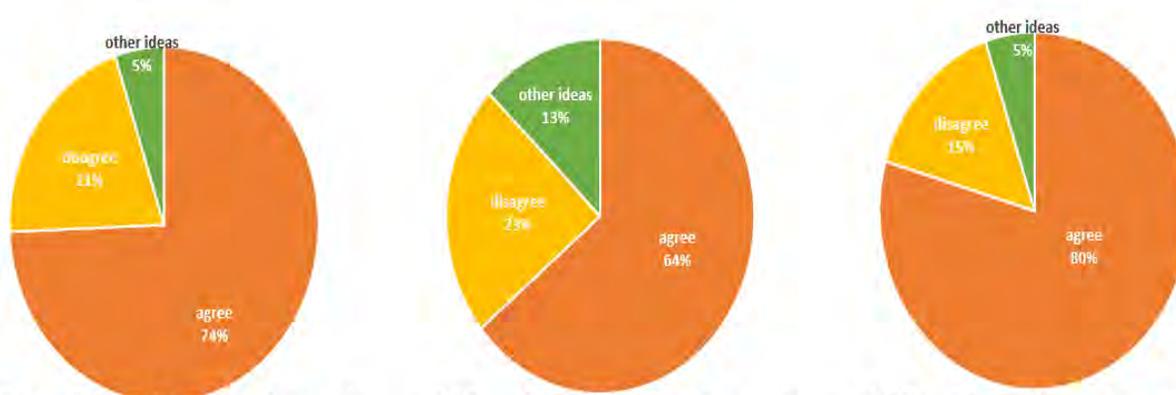
English Teachers' Perspectives on Linguistic Items' Influence on the Quality of English Writing



Concerning language accuracy, most of the teacher participants (80%) voted for the idea 'the more accurate language, the better English text', six participants (15%) disagreed, and the rest said that they would agree with this point of view if the essay fulfilled the required writing tasks. (See Figure 12)

Figure 12

English Teachers' Perspectives on Lexical Features' Influence on English Writing Quality



Q15: idea 'the number of lexical density is proportional to the English writing quality'

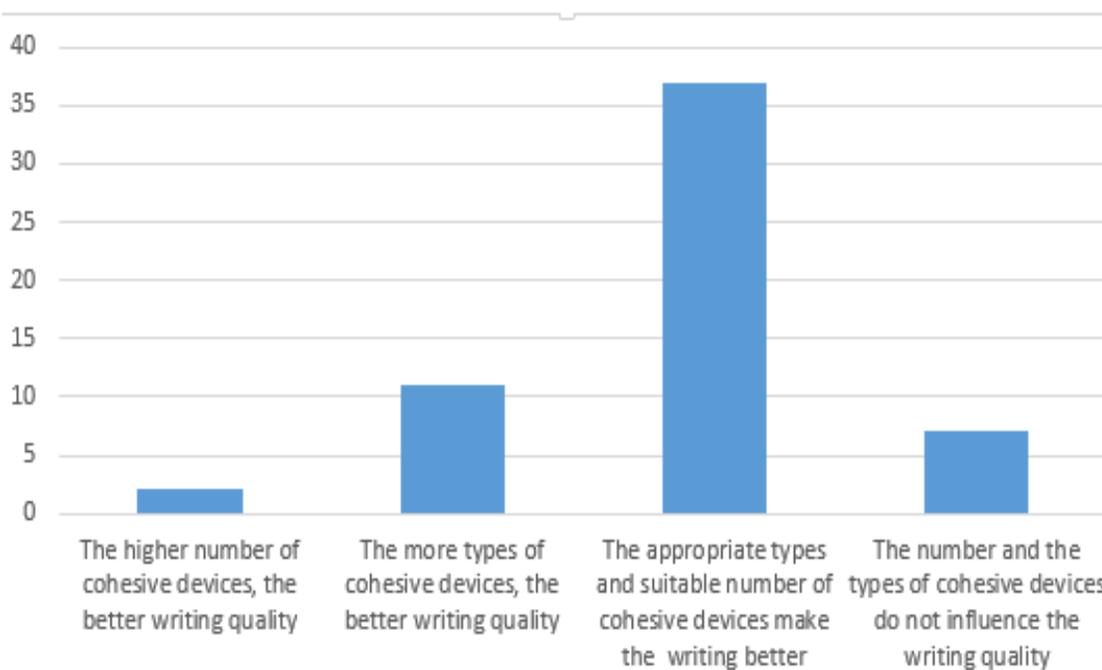
Q16: idea 'the number of academic word is proportional to the English writing quality'

Q18: idea 'the language accuracy is proportional to the English writing quality'

Regarding text cohesion, on the other hand, thirty-seven teacher participants (94.9%) agreed that using appropriate types and an adequate number of cohesive devices would make the essays/writings better. In contrast, eleven teachers thought that the more types of cohesive devices, the better the writing quality. The seven teachers believed that the number and the types of cohesive devices would not influence the writing quality; whereas the rest did. (See Figure 13) Finally, twenty-nine teacher participants agreed to encourage their students to use online English writing assistant tools or software when learning or practicing writing English via virtual environments. These teachers mentioned many benefits that students and teachers could obtain by doing this. For example, using writing aids can help students learn more actively and improve their self-study; it brings students novelty and good motivation for learning and practicing English; Moreover, these tools also help to reduce the teacher's workload in classroom sessions.

Figure 13

English Teachers' Perspectives on the Influence of Text Cohesion on English Writing Quality

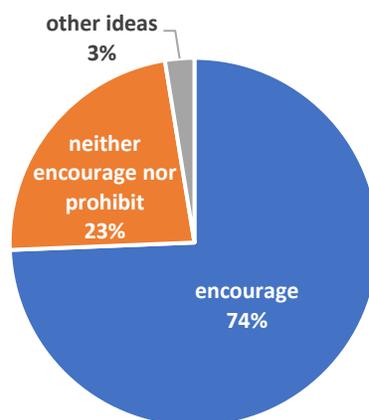


In contrast, nine teachers neither encouraged nor prohibited their students from doing so because they feared students overusing the tools, hence becoming less productive or self-confident in practicing writing English without using writing aids. Besides, one participant suggested that English teachers recommend standard English writing support tools and give students essential guides to help them employ the tools effectively. (See Figure 14).

Figure 14

Teachers' Perceptions of Students' Online English Writing Practice with Writing

Assistant Tools



In short, based on the survey's results, the study implicates some suggestions as follows:

Firstly, Vietnamese EFL students should apply some English writing assistant tools like Grammarly, online Cambridge or Oxford Learner's Dictionaries, Ozdic, or Cambridge Write and Improve, while learning and practicing writing English to improve their writing skills. Secondly, non-English Major students with low English levels should use some English writing assistant tools like Google Translation sparingly because it can make students too dependent on technology. It is necessary for English teachers to recommend sound English writing assistant tools and give students detailed guides so that they can employ the tools effectively, improve their essays/writings, and improve their English writing skills. Regarding linguistic features, Vietnamese EFL students need to focus on language accuracy and use the appropriate types and a suitable number of cohesive devices to produce sound English essays/writing. Finally, students should use academic words and complex structures in their English essays because these strongly affect the quality of their essays/writing. However, depending on the writing genres and topics, students must use the two linguistic items in their writing adequately and suitably to produce high-quality compositions.

Conclusion

This study investigated the relationship between lexical features and the quality of English essays made by Vietnamese tertiary students taking blended-learning or online English writing courses at universities in the last three academic years. First, the researchers examined the students' digital competence and adaptability in taking online English courses in the pre-, during-, and post-COVID-19 periods. Next, it explored students' experiences of online English writing study and practice. Then, lexical density, diversity, sophistication, language accuracy, and cohesive devices were examined in fifty-one EFL students' essays. After that, it also investigated the English

teachers' perceptions of the linguistic features' influences on the students' online English writing quality.

The study found that Vietnamese tertiary students' digital competencies are of a high standard, with plentiful experiences of using digital technology in learning and practicing English. Some students dealt with challenges such as performing with digital devices, communicating with friends and teachers to get physical and emotional support, reading guides and documents in English, or having financial issues while taking online English courses during the COVID-19 pandemic. However, most of them self-handled and solved all problems quickly and effectively. These findings seem to be somewhat similar to those in Eric et al.'s (2021) and Al-Maqbali & (2022) Raja's studies, except for the students' non-digital challenges (such as financial issues) and their expectations of learning and practicing English according to the paradigm of blended learning.

Concerning linguistic features, the results showed the strong influences of lexical sophistication and language accuracy on the students' essay scores. Also, the study concluded that the number of academic words and the lexical diversity were usually proportional to the students' English writing quality. The right word choice, vocabulary and high language accuracy could improve the quality of the students' online English writing. Finally, it revealed that the teacher participants' ideas were mainly similar in the conclusion of a positive link between lexical features and the students' online English writing quality. The English teachers also agreed to encourage their students to use English writing assistant tools when learning or practicing writing English online because of the educational benefits and convenience they could get while studying English online.

Conflict of Interest

The author(s) disclose that they have no actual or perceived conflicts of interest. The authors disclose that they have not received any funding for this manuscript beyond resourcing for academic time at their respective university.

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