

## LEARNER – CONTENT INTERACTION IN AN ONLINE ENGLISH LANGUAGE LEARNING COURSE IN VIETNAM

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**Abstract.** Interaction plays a critical role in both traditional and online learning processes. For online learners of English, interaction with course content is especially vital because it provides them with necessary knowledge in language competence and contributes to success of online learning. This paper presents the findings of a study about learner-content interaction in an online English learning course implemented at a university in Vietnam. The study findings reveal that the learners' online time-on-task, average grades and test scores decreased as the units went. There was a correlation among these three variables, but the online learning grades and tests did not predict offline study results. The study recommends a stronger integration between online and offline learning (blended) for overall success in language learning.

**Keywords:** online language learning, interaction, content, average grade, test score.

### 1. Introduction

Globally, online learning has become a very popular trend thanks to the boom in the application of the Internet in education in general and language learning in particular. Computer Assisted Language Learning (CALL), which was introduced in the early 1980s, offered students opportunity to learn languages in any context by the use of computer technologies [1]. Studies on EFL learners' and instructors' attitudes toward the use of CALL revealed that there was an association between satisfaction and the use of CALL [2, 3]. This was mainly due to their positive perceptions on language improvement and ease of technology utilization.

Moore (1989) [4] noted that when studying online, learners interacted with peers, instructors and course materials or content. Research and practice in online learning have shown that among the aforementioned three types of interaction, learners' interaction with content plays a critically important role because of its contribution to the success of learning outcome and course completion [4, 5]. Interaction with content is the process in which learners exploit the resources that are embedded in the online course for their study purposes. Abraham (2008) [7] argues that online resources involve not only learning materials but also learning activities and assignments to help learners achieve learning outcomes.

Recent advanced technologies have enabled technological and content language experts to make the most use of CALL, web-based learning (WBL) and mobile-assisted language learning (MALL) to offer language courses. With advanced evolution of different learning management

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systems (LMSs), the content of an online course (e.g., study materials and activities) can be structured according to a variety of pedagogical needs of the course developers. However, a number of studies [2], [7, 8] expresses concerns about learners' motivation, quality of online learning time and online self-regulation. In Vietnam, a few online learning courses have utilized state-of-the-art technologies to teach the English language online, especially for speaking skills. For example, Augmented Reality is used as an LMS to teach speaking by TOPICA NATIVE (<https://topicanative.edu.vn/>).

To the best of the researchers' knowledge, studies about learner' online interaction in Vietnam are still limited. Therefore, this study makes some contributions to research on learners' interaction with content of an online language learning course implemented in a developing country where technological conditions and online teaching pedagogy are yet to be advanced to the levels found in developed countries.

## 2. Content

### 2.1. Literature review

Since the beginning of CALL, attention has been paid to the development of content embedded in online courses to foster learners' language skills (listening, speaking, reading and writing) and language aspects (e.g. grammar, pronunciation). With the participation of both computer experts and language educators, online language courses have been able to provide learners with various activities or exercise types, such as multiple choice, matching, point-and-click and simple form-filling. Most of the exercises are designed with task-based instruction (TBI), which is important to and effective in second language learning [10]. For example, in reading skills, a large body of studies have been conducted on the use of technologies like electronic dictionaries, text-based glosses as well as annotations and multimedia glosses to teach and learn vocabulary, which is essential for learners to understand texts [11]. The results of an experimental study by Zhang and Wang (using pre-test, computer-aided teaching and post-test) indicated that college student reading performance was enhanced, besides other elements like attitudes and interests [12].

In respects of *listening* skills, computers allow storage of both video and audio files for learners to listen and do accompanying tasks. The use of computer and other technologies has been proven to make learners' listening comprehension more effective and efficient [11, 12]. Past studies have revealed that learners' listening comprehension was greatly enhanced with online learning freeware like Schoology [13]. Dang (2010) [15] argued that listening is a skill that Vietnamese learners are normally weak at, but very few studies have been conducted to examine how online courses could help Vietnamese learners enhance aural performance [16]. A study by Lien and Nguyet [17] indicated that learners' listening and speaking skills are enhanced through practices in Moodle platform, but it did not investigate in details how this enhancement was made.

*Writing* is one of the productive skills that have been taught online through various technological means, such as blog and Anytown [18]. There are also online courses that offer learners key aspects of writing conventions ranging from grammar, word usage to the process of writing an academic essay [19]. The application of advanced technology has made immediate corrective and targeted feedback possible [17, 18], and learners' frequency of editing their own written works has been found to increase [22]. Soh et al. (2018) [18] stated that one of the most important factors influencing learners' desire to practise writing online was the teacher's provision of support and feedback through the use of technological tools.

Another productive skill in language learning, *speaking*, has also been made possible in online

courses. It has been claimed in the literature that with technology, learners can improve their pronunciation proficiency and speaking skills accordingly [20, 21]. Doremalen et al. (2016) [25] concluded that the use of automatic speech recognition (ASR) technology enables online learners to engage in speaking practices; however, corrective feedback from ASR systems might not be able to provide sufficient instructions to learners on how to correct their pronunciation. It is generally agreed that in language teaching and learning, the quality of teacher's feedback on learners' oral production is more effective in terms of comprehensibility and effectiveness than that of ASR [26]. Furthermore, there was little evidence from past studies to universally show that asynchronous multimedia oral communication and computer-mediated communication led to speaking improvement [24, 25].

The association between quantity and quality of online interaction has been examined in the CALL literature. Some researchers have posited that there is a positive correlation between access rates and grades [29]. Similarly, Zimmerman (2012) [6] suggested that the more learners interacted with the course content, the higher success they achieved. This view was complemented in an earlier study by Murray, Pérez, Geist and Hedrick (2012) [30] which indicated that learning materials promoted the attainment of learning outcomes. Similarly, study by Romero and Barberà (2011) [9] showed a slight correlation between students' time-on-task and their academic performance. Nevertheless, other researchers viewed that it was the quality that mattered, not quantity of interaction [31], and interaction with online materials might not result in academic success [8]. Similarly, Grandzol and Grandzol (2010) [32] found negative association between learner-learner interaction and course completion rates.

In CALL and web-based learning, language teachers tend to applied task-based instruction approach to design online tasks that are authentic, interactive, personalized [10]. For example, online learners can watch a video clip, do interactive tasks like multiple choice, blank fill-in, and receive instant feedback from the LMSs. According to task-based instruction approach, any task should be performed in three phrases of before, during and after doing the task [33]. The online course that is investigated in this study was also designed with task-based approach in mind (see description below).

Despite numerous advantages of CALL in enhancing learners' language competence, there are concerns that need further investigation, one of which is the measurement of learning outcomes. Most of past studies have based on survey to collect participants' perceptions about their experiences in using fully online or blended language courses [18], [34] and only few utilized empirical data from LMS systems for language learning [14], [24]. This study is one of the few in Vietnam that investigates the learners' interaction with the content of an online English language learning course stored in an LMS. The study was guided by the following three research questions:

- (1) What was the learners' pattern of interaction with the course content?
- (2) Is there a correlation between the learners' time-on-task, average grades and test scores?
- (3) Is there a correlation between online study results and offline grade point average (GPA)?

## **2.2. Research methodology**

### **2.2.1. Participants**

The participants of this study were undergraduate students who used an online English language learning course (described below) as part of their four-year study for a Bachelor of Arts degree at a Vietnamese university. In the first two years of this degree, they studied general English, both in face-to-face classes and online. In the traditional lessons (about 12 hours per week), they studied language skills with the university lecturers, some of whom were also assigned to supervise the students' online learning. The students were required to fulfill at least 80% of interaction with the online tasks in each study level. However, there were neither

requirements on grades achieved for each task nor specific obligations about online interaction with peers and instructors. At the beginning of their first academic year, every student was provided with an account to access the online course together with a hands-on orientation session on how to use the learning management system.

### **2.2.2. The online course**

The online English language course in this study (<http://hello.hanu.vn>) was developed by the lecturers of the university and ran on Moodle. The main content of this course was grouped into five levels of English proficiency: A1, A2, B1, B2 and C1 (from beginner/elementary to advanced levels) of the Common European Framework for Reference (CEFR). Each study level had nine units which were designed to help students enhance their language skills and aspects (reading, listening, speaking, writing, grammar and vocabulary). In each of these language skills or aspects, the students had to follow three steps sequentially.

First, they had to do exercises in the “start-up” part to get some language inputs presented in different multimedia formats, such as audio, video and text. Next, they would do the exercises in the ‘practice’, for example: filling in blanks, answering questions and matching. The students often received instant automated feedback from the system about the correctness of their answers. Finally, they had to do the ‘review’ tasks to consolidate what they had done in the previous steps. In some units, students could send the results of their speaking and writing files to the instructors for grading and comments. Due to technical constraints, most of the speaking tasks were in the forms of ‘listen and repeat’, or non-speaking tasks like ‘marking word stress’, ‘identifying sentence intonation’, etc. However, there were also a few tasks in which learners had to record longer oral answers to questions on the screen and send the audio files to the instructors for marking.

Hence, it is possible to claim that the online course in this study was a blended one despite the lack of integration between what learners did in online environment and what they studied in the face-to-face lessons.

### **2.2.3. Data collection process**

After the learners had used the course for about a year (from September 2018 to July 2019), the researchers accessed the learning management system (LMS) to extract data needed for this study (average grades, test scores and time-on-task for each unit). By the end of July 2019, the system recorded data from 1,115 learners who had completed the tasks for level B1. This level was chosen because by the time this study was conducted, the majority of participants had completed it. The researchers also acquired the learners’ average scores for end-of-semester test (conducted in traditional method) to explore correlation between the results of online and classroom tests.

### **2.2.4. Data analysis**

The data were analysed using both simple descriptive statistics, such as frequency analysis, inferential statistics with Statistical Package for Social Sciences (SPSS) – version 20 [35]. Within frequency analysis, the study focused on longitudinal investigation of the grades, test scores and time-on-task. Some written compositions that the learners sent to their instructors for marking were also mined to exemplify learners’ performance in productive skills (e.g. writing) in the English language. In order to find correlations among different variables (grades, time-on-task and test scores) the researchers used bivariate and multiple regression tests.

#### *Cronbach Alpha*

The researchers checked the reliability of the data collected (average grades, test scores and time-on-task). The Cronbach alpha values for all the retained items were over 0.90, which suggested acceptable internal consistency among the items [36].

## 2.3. Findings

### 2.3.1. Descriptive analysis

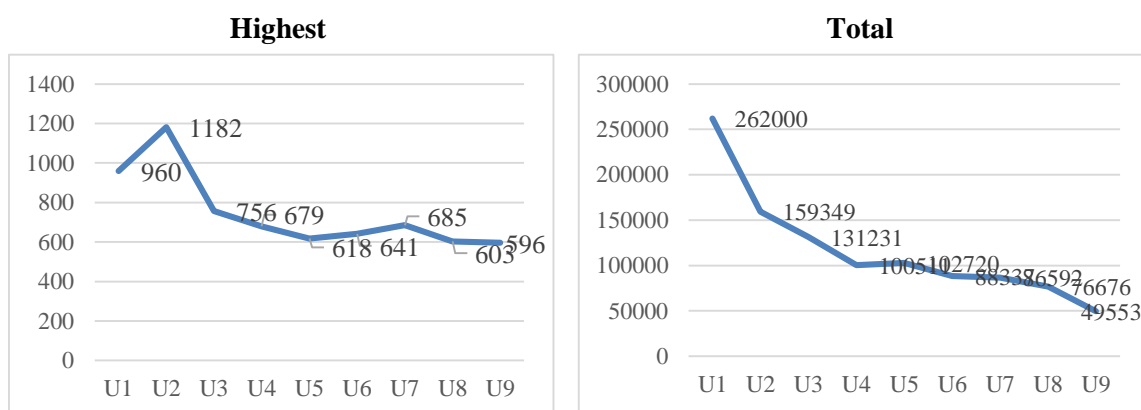
#### *Time-on-task (in minutes)*

**Table 1. Time-on-task**

Unit	Minimum	Maximum	Sum	Mean	Std. Deviation
1	10	960	262,000	310.43	174.400
2	0 (9*)	1182	159,349	188.80	139.006
3	0 (11)	756	131,231	155.49	123.480
4	0 (14)	679	100,511	119.09	99.030
5	0 (13)	618	102,720	121.71	108.903
6	0 (18)	641	88,337	104.66	99.348
7	0 (22)	685	86,592	102.60	103.114
8	0 (31)	603	76,676	90.85	94.720
9	0 (98)	596	49,553	58.71	72.535

\* number of students who did not spend any time.

Table 1 provides the summary statistics for the amount of time (in minutes) the learners spent for unit 1 to 9. It can be seen from the data that there was a general decrease in both the total and mean amounts of time from unit 1 to 9; and an extremely large difference between the minimum and maximum time allocated for each unit (e.g. zero versus 1,182 minutes for unit 2). This was also evident from the large standard deviation. The number of non-performers (those who did not spend any time-on-task) also increased as the units went: from 9 to 98 students for Unit 1 and Unit 9. The most time spent in each unit as well as the total amounts of time-on-task are displayed in Figure 1.



**Figure 1. Pattern of time-on-task**

Data in Figure 2 shows the changes in pattern of time-on-task obtained from the LMS. There was a down-sloping pattern for both the highest and total amount of time that learners spent from Unit 1 to Unit 9. The LMS recorded the highest time for Unit 2, but this levelled off from Unit 3 onwards. In terms of the total time spent for each unit, there was a sharp decrease from Unit 2 and the time difference between Unit 1 and Unit 9 was very large: 262,000 versus 49,553 minutes.

#### *Average grades*

The system recorded grades from 1,115 learners but many of them scored very low average grades (under 0.1 for all units). Thus, grades from only 857 students were used for the analysis.

**Table 2. Average grades**

Unit	1	2	3	4	5	6	7	8	9	Avg. for all units
Reading	5.93	6.92	5.75	5.28	4.64	4.66	4.64	3.47	3.28	4.95
Speaking	5.10	6.52	6.04	5.02	4.59	4.36	2.21	3.67	2.45	4.44
Gr. & Vocab	5.21	3.99	1.79	5.85	4.9	4.5	4.19	3.89	3.08	4.16
Listening	5.43	3.71	4.07	4.82	3.36	3.88	3.33	2.39	2.17	3.68
Writing	4.27	5.81	1.45	3.52	2.77	2.24	2.62	2.14	1.71	2.95

**Figure 2. Changes in grade patterns**

Data from Table 2 shows that the learners achieved the highest average grades (all units) for reading skills (4.95) and the lowest for writing (2.95) in the marking scales from 1 to 10. As the units went, the average grades decreased. Take reading skills, for example, the learners scored an average grade of 6.92 for Unit 2, but only 3.28 for Unit 9. For listening, they had an

average grade of 5.43 for Unit 1, but only 2.17 for Unit 9. The patterns of their grade changes are presented in Figure 2.

In general, Figure 2 shows a sloping pattern from Unit 2 to Unit 9 although the number of tasks for each unit was almost the same. The average grades for writing, grammar and vocabulary of Unit 3 were the lowest. A more detailed analysis of their interaction revealed that 33% of the learners did not do writing and 30% did not do grammar and vocabulary tasks. This was probably because of their having Lunar New Year break. Similarly, 48% of the learners did not do the speaking tasks of Unit 7, causing the lowest average grade of 2.21.

Besides doing the tasks or quizzes which were marked automatically, the learners also sent few written compositions to their instructors for grading. Underneath is an example of a composition that received grade 92/100 by the supervising instructor.

*I will never forget about that day-the day I made my parents sad. When I was in grade 9,I always went out with my friends and spent a huge amount of money.Until one day,I was invited to a birthday party by my old friend. I stole 500000 VND from my father wallet to buy clothes and gifts for her and I came back home at 10p.m. Coming home and seeing the sadness of my parents really made me frightened but I did not tell them that I stole the money. Two days after I became known, at that moment I was really scared and I admitted it. I said sorry to my parents and felt regretful so much. Until now I still regret about that and always remind myself not to make my parents sad. I shall never make the same mistake again (sic).*

The above composition shows that the learner had a good command of English despite some technical errors. In another example, the learners were asked to compose a text in response to the following situation.

### **Task 3 (WR)**



#### **Informal letter**

You are getting a letter from your pen friend, Jenny, in the letter she wrote

...I started to learn Chinese two months ago and it was more difficult than I thought. How about you? I hear that you are learning English as a foreign language. What difficulties have you faced and what did you do to overcome such problems? (cont.)

Write a letter to her and tell her about your experience in learning English. Start the letter by "Dear Jenny,". You should write about 100-120 words



Dear Jenny,

It's me, I'm glad when I headed that you started to learn Chinese. As you know, I was studying English as foreign language. I think that studying new language which very difficult but it's bring many opportunities. I also had to face with many problem such as pronunciation, remember new words, ect.. I can't completely listen teacher's lecture in class and I having problem in communication. But in this time, my friends helped me so much. They tried to speak slowly so that I can hear, they teach me how I can remember new words, find effective learning and share them with me. I practiced speaking E all day, when I taking shower, cooking, walking, exercising... I think that you can improve by your friends, teacher.

I hope i can read a letter is written by Chinese from you !

Love you

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**Figure 3. Written task requirement and learner response**

The written task was in the format of the B1 writing test of the CEFR. The instructor had not marked the submitted piece of writing but generally, the learner had done rather well in making himself/herself understood despite technical errors like spelling, grammar and punctuation.

#### **Test scores**

Before analyzing the test scores, the researchers further cleaned the data by excluding all learners who had lower-than-ten minutes spent in the LMS and test scores of zero. This resulted in a much lower number of learners doing the tests in each unit (see Table 5 for details).

**Table 3. Test scores**

	U1	U2	U3	U4	U5	U6	U7	U8	U9
Non-performers	37%	51%	87%	88%	61%	85%	73%	88%	78%
Lowest scores	0.20	0.13	0.16	0.14	0.13	0.14	0.08	0.11	0.14
Highest scores	9.15	8.47	7.92	9.72	9.33	8.78	9.88	8.78	9.14
Average scores	3.53	2.14	0.39	0.42	1.70	0.48	0.79	0.38	0.72

Data from Table 3 shows that the number of non-performers was relatively high for all the units, especially from Unit 3 onwards. The lowest test score was 0.08/10 (for Unit 7) and the highest score was 9.98/10 (also for Unit 7). The average score for Unit 8 (0.38) was the lowest while that for Unit 1 was the highest (3.53). As mentioned in the previous part, the tests were in B1 format of the CEFR. There were two speaking tests but the learners did not do any of them.

In short, the analyses of the learners' interaction with tasks aiming at developing different language skills in this course indicated that they gained higher average grades in reading, speaking, grammar and vocabulary than in writing and listening. This is an interesting finding, but it is worth noting that most of the speaking tasks were receptive in nature such as matching word definitions with their meanings, filling in blanks instead of real speaking practice. This was also partly due to the technological constraints. Speech recognition engine was not installed in the course, which limited the opportunity for the learners to practise and receive instant feedback on their oral performance. They had to record their speaking tasks and sent audio files to instructors. The situation was the same for written files submitted in for comments.

#### *Correlation analysis*

##### *Correlation between time-on-task and average grades*

**Table 4. Correlation between time-on-task and average grades**

Effect size (r)	Sig. value (p)	Frequency	Unit
0.64	<0.01	809	2
0.59	<0.01	597	8
0.57	<0.01	824	1
0.57	<0.01	497	9
0.56	<0.01	660	5
0.56	<0.01	609	7
0.53	<0.01	708	3
0.50	<0.01	620	6
0.46	<0.01	647	4

Table 4 shows the Pearson correlation coefficients between time-on-task and average grades. There were positive correlations between the two variables for all the study units, and the effect sizes (r) were from medium to large [37]. The largest effect size (r=0.64) was in Unit 2 and the smallest was in Unit 4 (r=0.46).

##### *Correlation between time-on-task and test scores*

Similar investigation of correlation between time-on-task and test scores were conducted for each unit. However, before finding the correlation, the researcher further cleaned the data by deleting all learners who scored zero for the tests.

Table 5 shows the correlation coefficients between time-on-task and test scores. There were positive correlations between the time-on-task and test scores for all units with the exception of unit 6 ( $p>0.05$ ). The effect sizes of correlation ranged from a small level of 0.18



(Unit 6) to a large one of 0.53 (Unit 8). It is observed from the data that the number of learners who did the end-of-unit tests also varied a great deal, ranging from 528 (Unit 1) to 98 (Unit 8). There was a slight increase in Unit 9.

**Table 5. Correlation between time-on-task and test scores**

Effect size (r)	Sig. value (p)	Frequency	Unit
0.53	< 0.01	98	8
0.48	< 0.01	231	7
0.44	< 0.01	330	5
0.43	< 0.01	414	2
0.40	< 0.01	181	9
0.34	< 0.01	111	3
0.33	< 0.01	104	4
0.29	< 0.01	528	1
0.18	>0.05	126	6

*Correlation between average grades and test scores*

The investigation of correlation between the learners' average grades for all the tasks and corresponding test scores for each unit was implemented. Before finding the correlation, the researchers also cleaned the data by deleting the zero-test-score learners.

Table 6 depicts the correlation coefficients between average grades and test scores. There were positive correlations between the grades and test scores for all units and the effect sizes were relatively large, ranging from 0.52 (unit 3) to 0.80 (unit 5).

**Table 6. Correlation between average grades and test scores**

Effect size (r)	Sig. value (p)	Frequency	Unit
0.80	< 0.05	330	5
0.71	< 0.05	98	8
0.69	< 0.05	181	9
0.63	< 0.05	414	2
0.63	< 0.05	104	4
0.61	< 0.05	126	6
0.61	< 0.05	231	7
0.55	< 0.05	528	1
0.52	< 0.05	111	3

*Correlation between online average grades, test scores and offline GPA.*

The researchers collected the students' offline test scores or GPA from the university learning management system. The GPA was the average score that each student achieved at the end of Semester 1 through performing tests in language skills of listening, reading, speaking and writing in classrooms. Different from doing the online tasks, learners did the end-of-semester test in the face-to-face environment.

Table 7 shows the Pearson correlation coefficients among the variables. There was a correlation between the average grades and test scores ( $p < 0.01$ ), which confirmed the

aforementioned results. However, neither online average grades nor test scores were correlated with the GPA ( $p = 0.148$  and  $0.538$ , respectively). In addition, the large effect size between average grades and test scores ( $r=0.96$ ) predicts a concern of possible multicollinearity in the multiple linear regression.

**Table 7. Correlation between online grades, test scores and offline GPA**

		Average grade	Test score	GPA
Average grade	R	1	0.960	0.085
	Sig. (2-tailed)		0.000	0.148
Test score	R		1	0.036
	Sig. (2-tailed)			0.538
GPA	R			1
	Sig. (2-tailed)			

In general, it was apparent from the correlation analyses that three online learning variables (time-on-task, average grades and test scores) were positively correlated with each other with the exception of Unit 6 (between time-on-task and test scores). However, the online average grade and test score were not correlated to the learners' offline GPA.

### **Regression analysis**

#### *Multiple regression of time-on-tasks, average grades of test scores*

Multiple regression analysis was performed to see how much the independent variables of time-on-task and average grades could predict test scores. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity [35]. After the entry of the three variables, the total variance explained by the model (adjusted R square) was 0.359, which indicates that the model explains 35.9 per cent of the variance.

Table 8 shows that only the average grades ( $t(844) = 14.62$ ,  $p < 0.01$ ) were significant predictors in explaining test scores. The time-on-task ( $t(844) = -0.14$ ,  $p > 0.05$ ) did not make statistically significant contribution to the prediction of test score. Comparing the contribution of each independent variable, it is shown in Table 8 that when the variance explained by all other variables in the model was controlled for, the average grades made the strongest contribution to explaining the satisfaction ( $\beta = 0.60$ ). Beta value for time-on-task ( $\beta -0.006$ ) indicated an extremely small contribution.

**Table 8. Multiple regression of time-on-task, average grades of test scores**

	Beta	t	Sig.	Tolerance	VIF
(Constant)		1.623	0.105		
Average grades	0.604	14.632	0.000	0.446	2.243
Time-on-task	-0.006	-0.140	0.889	0.446	2.243
Adjusted R square: 0.359					

As mentioned earlier, an attempt was made to explore if the average test score and grade were significant predictors of GPA. Preliminary analysis revealed a violation of assumptions of multicollinearity ( $VIF > 10$ ) and these two variables only predicted 2.7% of the GPA. In other words, the online grades and test scores did not predict learners' performance of the offline test, probably because of the differences in the test format. However, this issue deserves further investigation.

## **2.4. Discussion**

This study aimed to investigate the patterns of learner interaction with the content of an online language learning course as well as the correlation among online learning grades, test scores, time-on-task and offline GPA. The results of this study will now be compared to the findings of previous work.

In terms of patterns of interaction with the course materials, the most striking result was that there was a large variability among the students in terms of time-on-task: some were very active while others were extremely inactive. These findings seem to be consistent with other research which found some engagement and disengagement participation by active and passive learners [33, 34, 35]. There was also a general decrease in the amount of time-on-task and average grades (for all language skills and aspects) from unit 1 to 9. The same decreasing pattern was also observed in the test scores despite some fluctuation among the units. Nonetheless, the learners of this course gained different outcomes in their interaction with content. The task-based instruction in this online language learning course aimed to support social, cognitive and affective elements of autonomous learning, and the learners could allocate appropriate time to learn individually (via interaction with content). These interactions with content were carried out via doing four-skill-integrated, grammar and vocabulary tasks [10]. However, the learners of this course gained different outcomes in their interaction with different components of the online materials.

First, their biggest achievement among the four skills was reading. This was probably because of their success in doing the vocabulary and comprehension tasks (mostly in multiple-choice formats) of the reading component. In addition, the learners improved their vocabulary in the grammar and vocabulary components (ranking the third among the five components). These results are consistent with those of other studies and suggest that technological tools and plugins can enhance the teaching and learning of vocabulary, which is key to reading and comprehending texts [11]. Although this study did not compare the improvement of reading skills between online and offline learning, it was evidenced from past study that the application of CALL could enhance learners' reading comprehension performance [12].

Second, it is interesting to find that the learners scored relatively high grades for speaking skills (second only to reading), which seems to support previous research into the impact of online learning on the development of speaking skills [17], [20], [21]. However, it is not in agreement with the result of Muhamad's (2014) study which revealed that online learning programmes does not contribute to the enhancement of learner speaking competence [27]. In order to claim whether learners make real improvement in speaking skills through online practice, pre- and post-test results should be designed within the course itself, Data from these tests would provide better empirical evidence of their progress in speaking skills.

In this course, only few students sent speaking files to the instructors for marking, comments; and none of them did the two speaking tests of the course. The lower grades of speaking skills for units 7, 8 and 9 also revealed a decrease in the learners' motivation for the online speaking practice, probably because they did not see much usefulness in doing the tasks and the cumbersome issue of recording and sending audio files for comments, which was defined as 'unhealthy environment' in an earlier study by Yunus, Hashim and Hashim [40].

Third, although this study did not extract all the writing that the students sent to their instructors for marking, it was evident that some were keen to write and some their work was marked by the instructors. However, their average grades for writing were the lowest among the language skills and aspects. These findings do not support the previous research which claimed that the use of online learning tools increase learners' writing competence [18], [21]. However,

these results need to be interpreted with caution due to the absence of instructors' specific comments on the learners' writing and valid test of writing competence embedded in the LMS.

Fourth, the learners had low grades for listening skills. Again, there is not sufficient data to claim whether learners made progress in their listening competence or not, but the lower grades in listening compared to reading and speaking skills could be explained by the fact that this skill was not a focus at school level in Vietnam [41]. This result did not match those observed in earlier studies which found evidence of learner progress in listening comprehension due to the utilization of technological application like Schoology [13]. However, in order for online learners to make improvement in listening skills, tailor-made instructions should be provided to poor listeners and higher skilled learners so that they could develop suitable online listening strategies[14]. In short, regarding the effects of learner-content interaction on the learners' language enhancement, the findings of the current study are mixed. It is obvious that in a blended learning environment, there may be other possible factors that influenced online English learning outcomes [34].

In general, aforementioned findings suggest that simple doing of online tasks might not be a guarantee of learning outcomes. In this blended course, the learners had to complete the required percentage of interaction and move from one task to the next in a rigid manner. Although Abrami, Bernard, Bures, Borokhovski and Tamim (2011) [42] suggested that it was necessary to impose certain rules and structures from the start of learners' online learning process, other study results have recommended the opposite [32]. According to Dang (2010) [15], standards for online teaching need not contain arbitrary thresholds for required interaction and flexibility of interaction with course content could have impact on student satisfaction while the lack of it could have a negative impact. Nonetheless, in a context where students are passive in their learning, it might be necessary to stress on the qualitative interaction with the course content, in addition to the required time-on-task. For example, besides requiring learners to move systematically from one task to another, there should be a threshold grade and score that learners had to achieve in each task as well.

In this study a few inferential tests were performed to explore relationship between different variables of learner-content interaction, namely time-on-task, average grades, test scores and the learners' end-of-semester GPA. The tests of correlation and multiple linear regression approved the first hypothesis that there was an overall positive relation between the time-on-task academic performance (average grades and test scores). These findings are in agreement with results of earlier studies which showed that there was a positive correlation between access rates and grades [9], [34], [30]. However, the findings of the current study do not support the previous researchers about the relationship between quantity and quality of interaction [8], [28, 29]. However, the study results did not support the second hypothesis about correlation between online average grade, test score and offline GPA.

### **3. Conclusion and implication**

The purpose of the current study was to investigate patterns and correlations among different variables of online learning as well as offline GPA. It arguably demonstrated a decreasing pattern of time-on-tasks, grades and test scores in online learning. The second major finding was that although there was a relationship among the aforementioned three variables, the online learning outcomes did not predict offline test results. This seems to suggest that there was little integration between online and offline learning materials. This is an important issue related to blended learning.

Anh et al. (2019) [43] argued in a blended learning mode, the instructors need to be supported with necessary skills in online moderation and make the most of offline classroom

time to remind the learners of interaction with online materials and doing accompanying tasks. In Vietnamese context, they (instructors) have to be patient in giving instructions to the learners and reminding them to be online for learning, not for entertainment. This, however, should be complemented by interesting online lessons to motivate online learning [44].

The present study provides some implications with respect to the delivery of online language learning course in Vietnam. The issue of quality learning needs further attention from educators, instructors and learners. First, as learners' interaction with content is critically important in learning outcome, educational institutions need to involve both academic and technical experts, online and offline teaching and learning to ensure quality of course materials as well as its design and implementation. Second, online instructors should be trained on several matters, including an understanding of EFL learners' language learning strategy, moderating techniques, and providing prompt and valuable feedback. Third, learners need to be highly autonomous, responsible for their own learning and less dependent on instructors [10], [40], [45]. However, these online learning qualities cannot occur by themselves. They need constant support technically and academically and reminders from others, especially from the instructors. With time, this will establish a good awareness for the learners to be online for quality learning [3].

### **Limitation and future research**

A few limitations to this study need to be acknowledged. First, the data was collected from only one cohort of learners and one level of language proficiency (B1) at a university. This limitation means that study findings need to be interpreted cautiously, and thus no generalization can be made. In addition, the study relied mostly on the quantitative data extracted from the LMS, which did not reflect in details the learners' perspectives on their interaction with the course content. Hence, it would not be possible to draw a definite conclusion about the course design or effectiveness of online interaction. Therefore, future research should include surveys, interviews and observation to obtain a fuller picture of learner-content interaction in an online English language learning course. Third, this study extracted an objective measure, time-on-task as one of the learning variables. However, time spent as a measure was problematic because the system could not detect accurately how learners execute the tasks. Although this did not undermine the correlation analysis, it suggested an incomplete model, e.g. limitation in the design of this study.

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