

# Content-Based Instruction (CBI) in Writing E-Brochure: Integrating Vocabulary Learning and Technology-Enhanced Language Teaching

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**Abstract**— In the past two years, technology has been evolving rapidly due to the pandemic outbreak in the whole world, and invoking a significant surge in usage of education technology. During these times, both teachers and students have been gradually becoming digital natives in carrying out teaching-learning process. The objective of this study is to investigate the use of Content-Based Instruction (CBI) in improving vocabulary mastery on the writing skills utilizing technology-enhanced language teaching into the learning. It was a qualitative approach study, where the participant's writing documents were evaluated by two raters employing a standard analytic rubric for assessing the vocabulary on the English Language Learner (ELL)' writings. Moreover, unstructured interview was performed as data triangulation. The findings revealed that there had been a substantial improvement on the learner's vocabulary size. The learner's writing competence developed since the words used within the writing documents were varied, and in accordance with the topic discussed. There was also a positive and moderate relationship occurred between teachers and learner that increased the creative learning and innovative teaching for both in using the technology. Future research can look into how CBI can affect learners' vocabulary learning either through synchronous or asynchronous.

**Keywords**—CBI; ELL; technology-enhanced language teaching; vocabulary learning

## I. INTRODUCTION

Mostly English Language Learners (ELL) in Indonesia focus more on receptive skills (reading and listening) rather than productive skills (speaking and

writing) because they prefer not to produce the language, they just receive and understand it instead. This is due to the varied linguistic and cultural background of the learners which affect their learning and how they acquire the language [1]. As a matter of fact, by integrating the receptive and the productive skills in the language learning, ELL can improve the development of their language acquisition itself. The underlying principles in learning a language is how to be communicative competence where the learners have the ability to understand and use the language to different interlocutors as a means of communication [2], [3]. It can be said that being communicative in language means that the learners are involved in using the authentic texts, having real and frequent communication interaction among learners. In accordance, the focus of the attention is not merely on learning the particular features of the language but also on how to use the language in required circumstances whether in oral communication, and/or in reading and writing activities where learner-centered approach becoming the main priority [4]–[6].

Significantly, in acquiring the four skills in learning and to be a proficient in a language, vocabulary has a pivotal role, both in receptive and productive skills. Without having extensive vocabulary size, learners will face difficulty in communicating their thoughts comparing to without comprehending grammar [7]–[11]. Therefore in the learning process, in order to facilitate the ELL to improve their vocabulary acquisition, additional and varied interesting activities are required. The

emergence of technology where many young ELL have been exposed to technological devices is considered as the effective tool for the ELL in their learning process as it is easily accessible, and allows people to share and exchange their thoughts and obtain information across the time which in recent years has become a part of everyday life [1]. Setting up e-learning as a divergence in teaching-learning method has been proven adequate in facilitating, and stimulating the ELL in increasing their vocabulary size. Utilizing technology within the learning can promote the learners to be autonomous and responsible with their learning due to the opportunities they receive for practicing and obtaining adjacent feedback from their teachers who designate themselves as the facilitators of education [12]–[17] in supporting and ensuring the presence of the improvement.

Likewise, the challenges faced by the lecturers in many universities in Indonesia in improving the vocabulary skill of their students, the lecturers in English Department, Politeknik Negeri Padang (PNP) have been experiencing the similar situation as well. This area has been their continuous work on how to increase their students' deep understanding of vocabulary, and facilitate them in the learning process by concentrating their works on what to teach, how to teach, and tools that can be utilized. Despite many studies have discussed this particular area, there is still a loop within the process due to shortage information on students' achievement in their vocabulary learning and other skills where vocabulary is required, and on students' strengths and weaknesses within their learning [9], [18]. Therefore, this study concerned on the implementation of content-based instruction in writing by emphasizing in the integration of vocabulary learning and technology. It was due to the fact that many of previous studies highlighted more on the use of technology in their learning without employing other techniques to assist the students in the learning process. To some extent, this study was aimed to fill the gap by examining the students' vocabulary acquisition by applying the Content-Based Instruction (CBI) in their writing utilizing the technology-enhanced language teaching.

## II. LITERATURE REVIEW

### 2.1 *E-Brochure*

Brochure either the traditional printed or the electronic is a means of communication containing of persuasive communication strategy. Since the beginning of Industrial Revolution 4.0 concerning more on the artificial intelligent, conventional management of documents has been shifted from digital documents onto electronic documents including the brochure [19], [20]. Taking into

account, there are particular traits should be followed in writing a brochure. The composition of the brochure should be coherent and intelligible, conciseness, audience recognition and involvement, and accuracy in attracting the readers' attention [21, p. 67]. Electronic brochure (e-brochure) in terms of the purpose and the content are similar to the traditional one which persuade people to purchase the product through the information provided within. The difference is on the display and the design. E-brochure deals with file consisting of text, voice, image, and graphic which is accessible for every one as long as they are connected to internet [20, p. 47]. Previous studies [19], [20], [22], [23] highlighted that e-brochure has become a common and popular source of information on these recent years, particularly in banking and tourism sectors because of their impact on the company' sales. This e-brochure has become the priority of many companies in advertising and marketing their product since it is accessible and flexible, low cost, time effective, user friendly format, high quality look, and environmentally safe [19], [24], [25].

### 2.2 *Content-Based Instruction for Vocabulary Learning*

In four language skills learned (e.g., listening, speaking, reading, and writing), learning vocabulary is fundamental in order to make the language learning succeed. Learning a language isn't just about learning grammar, a deep concern on vocabulary in the syllabus by showing its importance in language teaching is consequential [26]. Many studies confirmed that successful language learners who can communicate their ideas in spoken and written, and accomplish well in every aspects of language itself are those with sufficient vocabulary size. Therefore, direct and rich instructions of vocabulary can improve the learners' vocabulary acquisition, one of which is by carrying out explicit and in-depth understanding and learning on vocabulary, in terms of number of meeting held and element of attention on each meeting [7], [9], [10], [27]–[29]. Significantly in writing skills, to assist the learners to be able to transfer their ideas into quality texts, some vocabulary learning should be designed respectively, diversely, and repeatedly incorporating particular areas of vocabulary which are needed in written communication before the acquisition takes place [8], [10], [26], [29].

In line with this matter, Content-Based Instruction (CBI) is considered a relevant approach in this vocabulary learning. It is because CBI integrates the learning of subject matter knowledge: content or information through the medium of language. In CBI, the students learn and are required to accomplish

particular subject-matter topics to increase their target language proficiency [30]–[33]. Since the acquisition of vocabulary has been recognized as a significant part in producing spoken and written texts [8]–[10], thus implementing CBI into the learning can develop students' target language ability [31], [34]–[36] by exposing the students with authentic language input and meaningful contexts, and engaging them with activities of authentic language use [30], [33], [37]–[39].

To a large extent by implementing CBI in vocabulary learning, the students are provoked to be actively engaged and independent in all phases of learning process [31], [40], [41] as CBI concern more on improving the students' language proficiency and their communicative competence [42]. [43] pointed out that even when CBI was carried out in a non-English Program for Thai undergraduates, the obtained result demonstrated positive results where the English language performances of those students improved significantly. However, empirical evidences are needed to be accumulated to determine the deficiency of this approach [31], [44], [45]. [31] stated that the students who experienced CBI into their essay writing skills were lack of grammatical accuracy and sentences' complexity, even though there was an improvement on the number of vocabulary used within their essays. Despite the students improved their learning, particularly on substantial and intended parts of the language embedded within relevant content, there were inadequacies in terms of their grammar pattern concerning punctuation and capitalization [44], [46], [47]. Hence, mostly the errors existed because of less attention of teaching objective on grammatical structures, and the students' tendency and habit thinking and composing their words and sentences initially in their L1 [45], [47]–[49].

### *2.3 Technology-Enhanced Language Teaching and Learning*

Recently, there has been a comprehensive shifted in ways of learning in education, especially since the pandemic hit worldwide. It is an undeniable fact that language learning is included into this significance changes. The use of technology has become crucial in supporting the teaching-learning process and ensuring that the students' needs in acquiring the knowledge can be achieved [50], [51]. Technology as defined in The Merriam Webster Dictionary [52] emphasizes on the practical application used in accomplishing a task using technical processes, methods or knowledge. Incorporating technology into teaching-learning process facilitates the students to be more independent in their learning as they are provoked to have a good control on their learning

process, and to set the achievement they want to accomplish [53]–[55].

A comprehensive review of many studies highlighted that for the process of online learning which has been established for a few years, the students who have employed self-regulated in their learning outperformed those who haven't put much effort in organizing and managing their learning process in terms of academic performance and motivational beliefs [56]–[58]. Likewise, language educators [53], [59]–[62] agreed that technology-enhanced language learning has been demonstrated effective due to its varied and qualified authentic input and communication, instantaneous and relevant feedback, and pleasant learning environment and experiences [50], [51], [63]. By utilizing technology-enhanced language learning, the students acquire actual access to their learning and obtaining actual feedback for their performances, enhance their critical thinking and creativity in expanding their ideas and perception [54], [62], [64], develop decision-making and problem-solving skills [65], and improve their social interaction and learning in target language [17], [50], [61], [63], [66] which lead to their higher-level performance in learning.

However, a few studies found conflicting results on the use of technology in language learning. Integrating technology into the learning can distract the students to misuse the technology to do plagiarism and to play the entertainment the technology offers while using it, either intentionally or not [67]–[69]. Therefore, a tight supervision from the teachers while conducting the teaching-learning process should be carried out in order to limit the chance for the students to exploit the technology [67]. Despite its pre-eminence as a great medium for online interacting, technology might hinder the learning due to financial and technical problems such as adequate access, training, and support [70]–[72], and a decrease on students' speaking ability [73], [74]. [70] indicated that not all students can support the learning by utilizing the technology in the learning process. The problems relate to the cost that they should spend in acquiring computers, mobile phones, and internet package. Besides from that even though the present students are categorized into Generation - Z (Gen Z) who are considered to be regenerated by technology, several of them are still facing the technical problem in making use of the technology [55], [71], [75]. The lack of competencies in acquiring the technology make them frustrated instead of motivated [70]. Likewise, [73] and [74] accumulated evidences on the lack of communication occurred between students and teachers since audio, visual, textual effect of multimedia technology replacing the oral expressions of the teachers.

### III. METHODOLOGY

Exploratory investigation was the focus of this study concerning on the integration of vocabulary learning and the use of technology in EFL learners by employing Content-Based Instruction (CBI) in writing. A qualitative approach was taken to determine a well-developed perception on the existing problem aroused in order to find out related issues regarding the vocabulary acquisition [76].

#### 3.1 Participants

In this study, in order to answer the research question, a student who is doing her Final Project (FP); sixth semester was chosen where her FP's topic was in accordance with the problem discussed within the study. She was able to communicate by using elementary vocabulary in commonly-used expression in everyday situation, thus she was included into level A2-Basic User referring to the standard of Common European Framework of Reference (CEFR). Prior to the study, she had been informed with human consent and concerning her participation, and the procedure of the study [77].

#### 3.2 Instruments

In order to obtain the data, there were two instruments employed, the first one was analytic scoring rubric to assess the participant's vocabulary in her writing documents, and the second one was unstructured interview.

Most widely used analytic rubric for assessing the vocabulary in writing [78] cited in [79] was applied. The scoring rubric assessed the use of vocabulary as a part of a larger construct whether they were related and applicable within the context of the writing [79] whereby in this recent study was the writing of e-brochure. The assessment was set to the writing documents obtained prior to the implementation of CBI, and right after the CBI administered onto the writing process.

Unstructured interview was carried out for data triangulation in order to receive in-depth information on the subject being studied. There was a list of question consisting of five primary questions, however the answers were then developed by other questions to get more relatable and rich information about the topic [80]. Preliminary, the participant was asked for her compliance as the interview was recorded, and then transcribed by the researchers. Subsequently, to validate the transcript, then it was sent to the participants in terms of her approval on the authenticity of the content written [81].

#### 3.3 Data Collection Procedures

Data were collected from the writing documents –an authentic materials produced by the participant during the supervision of her final project in the duration of three months. There were several stages of data collection performed to make the participant profoundly involved within the writing process starting from writing the draft, revising, and finalizing the documents [82], [83]. Three text samples were collected, the first data was obtained before the CBI applied and the second data was at the end of the supervision process after experiencing the CBI. The documents were collected through *Whatsapp* application, and/ or email, and then were marked by two raters recorded as Rater 1 and Rater 2 in terms of anonymity. Meanwhile, the data from the interview were collected through zoom meeting, and *Whatsapp* chat for setting up the participant's approval on the transcript made. Utilizing adequate technology which was compatible to the participant's need was arranged in order to make the participant to be actively engaged within the process and the learning [84], [85].

Furthermore, the interview data which was taken for the data triangulation was analyzed descriptively based on the transcription which had been approved by the participant. The interview session was conducted in Bahasa Indonesia in order to make the participants felt comfortable, so more insightful data could be obtained. Five questions in the form of unstructured questions were given to the participants, and were carried out through zoom based conference at the participants' convenience.

### IV. FINDINGS AND DISCUSSIONS

The assessment for the vocabulary acquisition in writing for the participant' text document was performed by integrating the Content-Based Instruction (CBI) into the learning utilizing the technology-enhanced language learning. The purpose was to measure the participant' ability in understanding, remembering, and appropriate word-finding in the writings. The findings were derived from two independent raters and three text documents written by the participants during the study. It can be said that the findings were in accordance with the research question whether this CBI approach by utilizing the technology-enhanced learning can facilitate the improvement in ELL vocabulary size in terms of writing skill.

#### 4.1 Assessment from the Raters

After assessing the 1st text document from the participant, in terms of the vocabulary' range, the word/ idiom form, choice, usage, and the meaning, both of the raters; Rater 1 and 2 come to the same conclusion that the vocabulary mark in the writing is

in the level of “Fair to Poor”. It can be seen from the text sample that even though the sentences are written in a complete construction with the correct vocabulary words and proper endings, mostly the vocabulary used are in simple English. Words like “*children; fun; visit; get*” found in this 1st document can be replaced with other words instead sequentially to more specific words; *baby/teenager/youngster* for *children*; *pleasure; look around/ sightsee; seize/ apprehend*, for the latter. Nevertheless, Rater 1 has different point of view from Rater 2 concerning the development of ideas within the paragraph. She considers the ideas are expressed poorly, and not developed well, since the paragraphs on the documents are unequally divided due to limited size of vocabulary that the participant has. The sentences in this document indicate insufficient effort in organizing the ideas, like in “*Traveling to agro-tourism destinations will be a fun activity*”, without any supporting ideas in the succeeding sentences. Conceivably, lack of exposure to the words referring to the topic chosen makes the participant insufficiently recalls her working memory. In the matter of the word’s meaning, it is apparent that the participant demonstrates limited understanding of the words meaning. Since the document is in the form of brochure, thus more persuasive vocabulary that can influence the emotions, attitudes and beliefs of the reader should be used.

To some degree, the assessments made by the two raters for the 2nd and the 3rd documents show significant improvement concerning the vocabulary range, the word/ idiom form, choice, usage, and the meaning. Once again the two rates have the same perceptions on the level of the two documents which constitutes to “Good to Average”. They comply that the sentences written have shown a good understanding of sentence construction based on the compound sentences made, and the appropriate usage on each of parts of speech. It can be seen from the sentence, “*In 2015, the Governor of West Sumatra inaugurated the Agritourism Area at BBI Lubuk Minturun as educational tourism to cultivate food crops and horticulture*. In other words, it can be said that this last document written after experiencing the CBI within the learning process attempts to reach the goal of the task by providing more detailed and expanding information compare to the 1st document. The ideas shared have been developed as well in line with the topic of the writing. The 1st sentences on the 2nd paragraph has been adequately explained, and strengthen by supporting evidence and details regarding the facilities provided by the place in the latter sentences, like in the following sentences, “*Spending your time to this agritourism destination is certainly enjoying and entertaining. You can get a cool and fresh atmosphere to eliminate saturation. By*

*visiting BBI Lubuk Minturun you can sightsee while learning and getting to know horticultural plants*. Accordingly, during the problem-solving phase, it seems that teachers has performed their role well to observe and support the learning process so that the learner can comprehend the texts [41].

The result also indicates that the choice of words within the document has been elaborated with more “vivid”, “glowing” and “colorful” words in order to persuade and influence people to come to the place. The sentences in this 3rd document contains of more pleasant, persuasive and descriptive words such as “*certainly enjoying and entertaining, cool and fresh atmosphere*” for describing the situation of the tourism object, “*various types, spacious playground, wide variety of, fresh beautiful scenery*”, for explaining the facilities. Hence, the general growth of the vocabulary used is clearly stated within the three text documents seen from the depth of key vocabulary knowledge on a continuum. That is to say that sizeable vocabulary can increase the students’ self confident in their performance on other skills of English [86]. These findings support [31], [41], and [44] statements that CBI encourages the students to activate and develop their level of creativity in terms of using the imagination in recreating and reproducing the words in the target language while at the same time also focusing onto the topic discussed. Despite a few repetitions on the similar words occurred within the writings, as recognized by the two raters, they point out that the errors are inconsequential in regard to the flow of ideas. The writing in the documents has demonstrated not only what the participant has learned through a written product, but also maximized her learning through the resources provided [87, p. 53].

#### 4.2 Interview Results

Accordingly, the data obtained from the interview is in correlation with the result from the documents’ marking. The participant agrees that there has been improvement on her vocabulary acquisition since the 1st writing document she writes to the 3rd one. She also states that having larger vocabulary size facilitates her in developing the idea and increasing her creativity in expanding the sentences in her writing. As she said, “*Increasing. The number of words increase quite a lot. You know, there are many synonyms, which ..., actually there are many other others which are similar in meaning that can be used in writing*”. She also adds strengthening her previous statements, “*Yes, it is helpful. For example there is one synonym that I have just found out, so I can expand the idea of my writing, .... developing the ideas and the contents of my writing, ... so I won’t run out of words*”. Taken from these excerpts, it can be said that experiencing the CBI into her writing

process which has been carried out through technology-enhanced language learning encourages the participant to develop her writing, and at the same time to have deep understanding of meaningful content [31], [32], [41], [88], [89]. In other words, she learns something valuable and challenging in improving her writing by using and recognizing varied vocabulary in the target language through content.

Furthermore, she also highlights that mostly the words she uses on her initial writing deriving from her memory. Then within the learning process with CBI; writing her 2nd and 3rd documents, as suggested by the lecturer, she begins to utilize “Thesaurus” e-dictionary to look for possible choices of words together with their meanings. As a matter of fact, the learning experience provoke her to be creative to search for more new vocabulary which she has never thought before, as shown on her excerpt as follow, “because, ...I am looking for the words in Thesaurus, and the specific terms used in describing tourism object”. Then she also says that, “...you know, on the first draft, there might be words from the ones that I know and comprehend, and do not use dictionary. The 2nd one is quite a lot I use e-dictionary. Finally, the 3rd draft I use more e-dictionary to look for proper words to be used”. It is worth noting that the exposure of content into the participant’ language learning is indispensable aid which is interesting and relevant to her by involving her active participation through the process. Along with it, it also generates more opportunities and intelligences to make develop her vocabulary acquisition performances into a high level [40], [43].

## V. CONCLUSIONS

The overall obtained data derived from the writing documents and the interview results indicate that there has been an increase on the learner’ vocabulary size particularly those vocabulary concerning the topic chosen. It is clear that Content-Based Instruction (CBI) is beneficial in improving writing skills of the ELL in terms of variation in number of words used utilizing the technology-enhanced language teaching. The interaction occurred between the teachers and the learner in the learning process undoubtedly influence the learner’ creativity in expanding the writing composition because of the improvement on the vocabulary size. Hence, the effectiveness of CBI in vocabulary development encourages the learner in learning more words and uses them in their writing. Considering all of these, it can be said that there should be adequate attention set by English teachers for teaching vocabulary within teaching writing skills. When the learners are in control of their receptive vocabulary which is considerably larger than their productive one, thus they are in control of their

productive vocabulary and are able to use it properly. As to the limitations of this study, the three months period in administering the investigation and the limited number of the participant set into high regard. Furthermore, in order to accumulate the effect of CBI on vocabulary learning through technology-enhanced teaching language, longer time period and more participants involved within the assessment should be implemented.

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