Acquiring Vocabulary in English in Content and Language Integrated Learning Programme: The Questions of Strategies and Academic Performance

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Abstract: In any language, the most important aspect that needs to be acquired and empowered is vocabulary. As most higher learning institutions in Malaysia have implemented English as the medium of instructions for the courses offered, students must have adequate vocabulary to cope with their studies. Empirical research has suggested that insufficient vocabulary knowledge may affect academic progress. This study aimed at the vocabulary learning strategies employed by students in the Content and Language Integrated Learning (CLIL) programme and the correlation with their academic performance. Data were procured from Schmitt's questionnaire on vocabulary learning strategies under the Determination, Social, Memory, Cognitive and Metacognitive dimensions. The findings indicate that the metacognitive strategies were the most preferred strategies while the cognitive strategies were the least preferred among the students. It is also found that the choice of these strategies was largely to do with the nature of the students' generation, among which, the availability of the internet and information technology plays a significant role in the education and the learning process. With the choice of information at their fingertips, traditional strategies like referring to books and lecturers are less preferred. The findings of this study can provide a direction for instructors in enhancing their vocabulary teaching techniques and in designing any intervention programme for the students to enhance their vocabulary acquisition.
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Keywords: Engineering, ESL, Vocabulary, Vocabulary learning strategies

1.   Introduction

Most higher learning institutions in Malaysia have implemented English as the medium of instruction (EMI) especially in science and technical programmes. The motivation behind this EMI implementation, or content and language integrated learning (CLIL) is to improve the local students' English language competence. This is because a large amount of information is available in English. Thus, the exposure to the language in the classroom can contribute towards the students' competence in the language. Good competence in English can be a key to gain information and to facilitate the acquisition of knowledge in their fields. Besides, mastery in the language will be an added advantage to seeking employment in the globalised economic world (Mohamed, 2003).

In any language, especially the second and other languages, the most important aspect that needs to be acquired and empowered is vocabulary. Vermeer (1992) stated that 'knowing words is the key to understanding and being understood' (p.147). This indicates that adequate vocabulary is required for effective language use. As for English, Hazenberg and Hulstijn (1996) suggested that in order to comprehend a university text in the language, university students must have vocabulary knowledge of 10000 to 11000 word families, implying that those with limited vocabulary knowledge may not be able to comprehend the contents of the reading materials. This may impair their learning and affect their academic progress

As English is only the second or other languages for most people in Malaysia, students often face problems in their university studies because they do not have adequate vocabulary in the language. Studies have consistently shown that a large proportion of university students in Malaysia do not have sufficient vocabulary knowledge in English to cope with reading texts in the language, which, in turn, could negatively affect their academic performance (Bava Harji, et al., 2015; Ibrahim, et al., 2016; Abdul Aziz, 2021). Engineering students, for example, often face problems in understanding technical terminology and the concept of subjects in English (Ariffin, et al., 2016). Understanding these is very important in the engineering field as failure to do so may result in failure to find solutions to any related problems in the field. Thus, it is important for students to enhance their vocabulary level as to help them cope not only in their studies but also for future undertakings in the field.

Research on English vocabulary knowledge and vocabulary learning strategies (VLS) have been quite replete and often revisited (Hazenberg & Hulstijn, 1996; Laufer, 1997; Nguyen and Nation, 2011, Kurgat, 2014; Sidhu and Mohamad Nor, 2020; Sasidaran, et al., 2021; Sulaiman, Salehuddin and Khairuddin, 2018; Wong, et al., 2019; Ibrahim, et al., 2016). However, these studies mostly focused on vocabulary level, the strategies used in enhancing vocabulary acquisition, and its relationship with skills performance in the language like writing, speaking and listening in English. In addition, the focus of the studies were mainly on English as a Second Language/Other Language (ESL/EOL) students in general. Focuses on specific student groups, like students in the CLIL programme, and the relationship of VLS and their overall academic performance have been scarcely tapped. Thus, the present study aimed at filling the gap by focusing on CLIL students' strategies in acquiring vocabulary in English, and to determine the relationship between their academic performance and the strategies employed. The research questions are, thus, formulated as follows: (1) What are the strategies employed by Content and Language Integrated Learning (CLIL) programme students in acquiring vocabulary in English?, and (2) Is there a relationship between the Content and Language Integrated Learning (CLIL) programme students' academic performance and the vocabulary learning strategies employed?

1.1   Vocabulary Learning Strategies

Vocabulary learning strategies are part of language learning strategies (LLS), employed by learners to acquire new vocabulary items in a second language. Like LLS, VLS also involves activities, techniques or methods used by learners to help them acquire, store, retrieve and use the items. Cameron (2001) described VLS as learners' actions to help them comprehend and remember vocabulary items. As the study level becomes more advanced, the reading content will become more challenging as there will be more new words and phrases to be understood. Learners need to rely on their own efforts and be responsible for their own learning as teachers cannot, nor should they help learners to learn all of the new vocabulary. This is because if the teacher spends too much time on explaining vocabulary in class, it could result in 1) students remaining too dependent on the teacher, 2) losing opportunities for learning to use a dictionary, and 3) losing class time for the communicative use of the language (Allen, 1983, p. 82).

Researchers have proposed a wide range of VLS (Stoffer, 1995; Gu and Johnson, 1996; Schmitt, 1997; Nation, 2001). Stoffer's (1995) taxonomy, for example, consists of 53 strategies like strategies for authentic language use, creative activities, self-motivation, creating mental linkages, visual and auditory, physical action, overcoming anxiety, and organizing words. Along the same line, Gu and Johnson (1996) classified eight main groups of VLS: beliefs about vocabulary learning, metacognitive regulation, guessing, dictionary, note-taking, rehearsal, encoding, and activation.

Nation (2001), on the other hand, proposed a taxonomy of three classes of VLS, namely, planning, sources, and process to distinguish aspects of vocabulary knowledge and the learning process.

The most adopted VLS is Schmitt's (1997) taxonomy which is based on Oxford's (1990) classification of LLS: social, memory cognitive and metacognitive. Schmitt classified VLS under two main categories, which are discovery and consolidation strategies. Figure 1 clearly illustrates these categories and their subcategories.
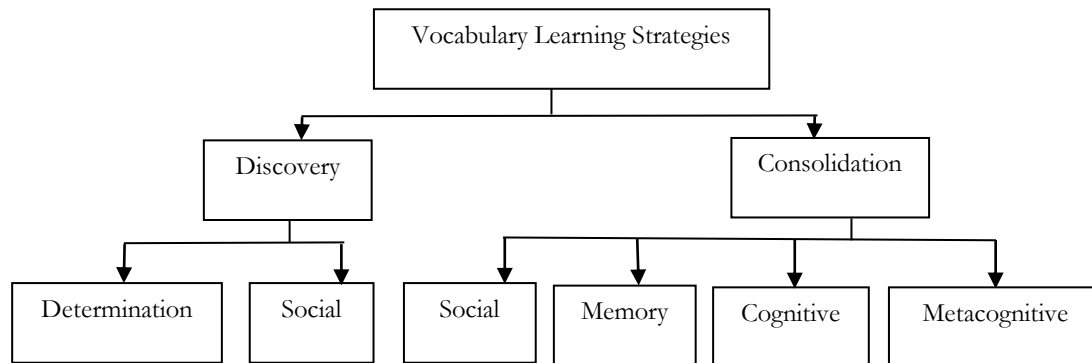
Fig.1 Taxonomy of Vocabulary Strategies (Schmitt, 1997)

Schmitt (1997) put forward that discovery strategies are those used to discover new words. In discovering new words, learners employ 1) determination strategies, which is discovering new words without any additional help, and 2) social strategies, which is learning new words through interaction with others. The consolidation strategies, on the other hand, are strategies employed to remember the meaning and other aspects of the new words' lexical knowledge. These strategies include: 1) social strategies, 2) memory strategies which are used to link new words to prior knowledge, 3) cognitive strategies which are mechanically memorizing new words, and 4) metacognitive strategies, which are mental processes involving planning, monitoring and evaluating one's own learning.

1.2 Academic Performance and Vocabulary Learning Strategies

The English Medium Instruction (EMI) or Content and Language Integrated Learning (CLIL) has been recognized as a powerful approach in the teaching of content subjects through English. The reasons for using CLIL are double-focused; the simultaneous learning of a foreign language and knowledge of content. As put forward by Corder (2013), CLIL provides complete exposure of language and content without the need for more time in the language curriculum. This form of teaching exposes students to academic content in a language they are still learning (Lightbown, 2014).

Graham, Choi, Davoodi, Razmeh, and Dixon (2018) claimed that students need both the essential substance content background knowledge and adequate language capacity to achieve the learning objective of the class. However, in order to perform a range of EMI/CLIL tasks, a solid amount of vocabulary is required. For example, students need to acquire at least 5000, and preferably 8000 – 9000, word families to understand various genres of authentic materials for reading; 4000 – 5000 word families to comprehend academic spoken English; and 8000 word families for sufficient listening comprehension (Dang & Webb, 2014; Schmitt, Cobb, Horst et al., 2017). Similar range of vocabulary is also needed for writing and speaking skills (Laufer & Nation, 1995; Uchihara & Saito, 2016).

Research has shown that there is a significant correlation between vocabulary knowledge and academic achievement. For example, Roche and Harrington (2013) explored vocabulary knowledge as a predictor of written Academic English proficiency and overall academic performance in an EFL context in Oman. The findings show that besides academic writing skills, vocabulary knowledge is a good predictor of overall academic performance. This supports earlier claims on the significance of vocabulary knowledge for academic success in EMI programmes (Waring & Nation, 2004; Hsueh-Chao & Nation, 2000).

Although there have been a lot of studies done on the relationship between vocabulary learning strategies and vocabulary size or vocabulary knowledge, and vocabulary knowledge and academic performance, not many studies are found on the relationship between EMI/CLIL programme students' overall academic performance and their VLS. Most of the studies have focused on the English VLS and the learning performance in the English subject itself. For example, Khalifa (2015), in her study on the relationship between vocabulary learning strategies on the achievement of Libyan EFL university learners, found that high achievers and low achievers used different strategies in learning, retaining and recalling new vocabulary items. The findings indicate that high achievers learn new vocabulary items with proper understanding and full memorization, enabling them to apply the items in other contexts. Low achievers, on the other hand, did not try to link the new concepts learned with the known concepts, nor did they apply them in other contexts.

Along the same line, Zhang (2011) compared the strategies employed by good and poor learners among Chinese non-English majors in learning vocabulary. She found that the good learners employed 21 strategies (out of 26 vocabulary learning strategies investigated) more frequently than the poor learners, explaining why the good learners were good learners. The study concluded that the more frequently learners use vocabulary learning strategies, the fewer problems they will face in their study. This is in line with Alzahrani and Chaudhary's (2022) study on the Saudi EFL learners and their performance in ESP classroom. The findings show that the use of various vocabulary learning strategies has a considerable impact on the learners' performance in the classroom which was reflected by the individual pre-test and post-test scores.

Despite the significant role of vocabulary knowledge in learning academic content in English, most of the vocabulary teaching in the Asian ESL classroom is normally supplementary (Fan, 2003; Catalan 2003). For example, students are given the explanation of the words when the words or phrases were difficult for them. Furthermore, if there were new vocabulary items is left to the students' consideration to find out the meaning in the dictionaries themselves (Catalan, 2003). They are not formally taught the VLS and how to be autonomous vocabulary learners. Thus, it is hoped that the findings of the present study will benefit both content and language instructors in improving their vocabulary teaching techniques and in designing any intervention program for the students to enhance their vocabulary acquisition.

2.   Methodology

This is a non-experimental study, using descriptive quantitative design for data collection and analysis. A total of 130 students from various courses in a public university that employs the CLIL programme EMI/CLIL policy in the delivery of all courses for all study programmes offered, took part in the study. Hence, English language proficiency is of paramount importance for students to cope with their studies. The students were in the final semester of their study programme, thus, they would be able to share their learning strategies, particularly the VLS, in coping with the EMI demand in their learning.

The data collection involved an online questionnaire survey on VLS posted via the *WhatsApp* application to the class groups. The objectives of the study were also communicated to the students using the same application. Only students with English as their second or other language were invited to take part in the study. The survey was made available for two months and to avoid data duplication or redundancy, participants were only allowed to submit their response once.

The questionnaire consisted of two sections. Section A gauged the demographic background of the participants. This included their level of study, gender and academic performance in the form of Cumulated Grade Point Average (CGPA). Section B was adapted from Schmitt's (1997) Vocabulary Learning Strategies Questionnaire (VLSQ containing 40 statements that examined the students' vocabulary learning strategies under five dimensions: Determination, Social, Memory, Cognitive and Metacognitive. The participants were asked to rate their frequency of use for each category based on five likert-scale of 'never or almost never', 'occasionally', 'sometimes', 'usually' and 'always or almost always'. The adapted questionnaire was evaluated by a content expert and piloted for validity prior to distribution.

Data were analysed in terms of the mean score to determine the vocabulary learning strategies employed by the participants. In addition, the data were also treated using the Statistical Package for the Social Sciences (SPSS) version 23.0 for descriptive statistics, and paired sample tests. The descriptive statistics involved were the mean and standard error, and the paired sample test was used ($p<0.05$) to determine whether there is any relationship between the students' academic performance and the vocabulary learning strategies employed. The following hypotheses were, thus, formulated:

H_0= There is no relationship between students' academic performance and the vocabulary learning strategies.

H_1= There is a relationship between students' academic performance and their vocabulary learning strategies.

3   Results and Discussions

3.1   Strategies employed in acquiring vocabulary in English

The analysis shows that students in the EMI/CLIL programme employed all the five categories of VLS, i.e Cognitive, Memories, Social, Determination and Metacognitive, in acquiring vocabulary in English to varying degrees of frequency. Table 1 shows the details of the analysis.

Table 1. Students' Vocabulary Learning Strategies

Dimension	Mean Score
Cognitive	2.864
Memories	3.315
Social	3.038
Metacognitive	3.346
Determination	2.958

As can be seen from Table 1, the students favoured the Metacognitive Strategies the most in acquiring the vocabulary items in English (mean score=3.346). This is followed by Memories Strategies (mean score=3.315), Social Strategies (mean score=3.066), Determination Strategies (mean score= 2.958) and cognitive strategies (mean score=2.864). The results of the current study seems to be aligned with the study conducted by Stoffer (1995) and Schmit (2000) which reported that metacognitive strategies played major parts in vocabulary learning and second language learning process.Mean score was conducted to determine the vocabulary learning strategies preferred by the students in each category. Table 2 provides a detailed analysis of the categories.

Table 2. Mean Score of Vocabulary Learning Strategies

No	Statement	Mean	Standard error
Cognitive Strategies			
1	I practise word through physical activity.	3.3615	0.10069
2	I use word lists.	2.9000	0.09636
3	I practise word through verbal repetition.	3.1154	0.09434
4	I write word repeatedly.	2.7077	0.11885
5	I keep a vocabulary notebook.	2.4846	0.10316
6	I practise word using flash card.	2.1615	0.09997
7	I study words by taking notes in class.	3.0000	0.09331
8	I utilise vocabulary section in a text book.	2.9000	0.10177
9	I listen to tape (or CD or MP3) of word lists.	3.3769	0.08617
10	I use a vocabulary learning textbook.	2.6385	0.10245
		Mean = 2.864	
Memories Strategies			
1	I analyse and study parts of speech.	3.3000	0.09623

Cognitive Strategies

No	Statement	Mean	Standard error
2	I analyse and study affixes and roots.	3.1769	0.10692
3	I study a word with a pictorial representation of its meaning.	3.3077	0.09612
4	I imagine the word's meaning.	3.5077	0.09282
5	I connect a word's meaning to a personal experience.	3.5769	0.08996
6	I connect a word to the words that I already know.	3.7615	0.09058
7	I connect a word to its synonyms and antonyms.	3.5615	0.09521
8	I group words together to study them.	3.0769	0.10105
9	I use new words in sentences.	3.2692	0.08790
10	I use new words in English conversation.	3.1615	0.09508
11	I study the spelling of the word.	3.4154	0.09317
12	I study the sound of the word.	3.2231	0.09154
13	I say a word aloud when studying.	3.4231	0.09941
14	I use the Keyword Method.	3.1080	0.0954
15	I paraphrase a word's meaning	2.9538	0.09127
16	I learn the words of an idiom together	2.8308	0.09080
	Mean = 3.315		

Social Strategies

No	Statement	Mean	Standard error
1	I ask lecturer for the meaning.	2.8846	0.10511
2	I ask classmates or friends for the meaning.	3.0769	0.09502
3	I study or practice meaning in a group.	2.9231	0.10338
4	I interact with native speakers.	2.6523	0.10457
5	I look for extra English information through the Internet to learn new vocabulary items.	3.6538	0.10105
	Mean = 3.038		

Metacognitive Strategies

No	Statement	Mean	Standard error
1	I use English language media.	3.8000	0.09483
2	I self-test word knowledge.	3.4538	0.08676
3	I skip or pass unknown words.	2.9077	0.09231
4	I continue to study words over time.	3.2231	0.09348
	Mean = 3.346		

Determination Strategies

No	Statement	Mean	Standard error
1	I use bilingual dictionary.	3.1538	0.09917
2	I use monolingual dictionary.	2.8308	0.09211
3	Guess the meaning from word classes, such as noun, verb, adjective, adverb, to discover the meaning of new words.	2.7923	0.10457
4	Guess the meaning from the grammatical structure of a sentence to discover the meaning of new words.	2.9077	0.09231
5	Guess the meaning from aural features, such as stress, intonation, pronunciation, to discover the meaning of new words.	3.1080	0.0954
	Mean = 2.958		

As mentioned earlier, the metacognitive strategies top the students' choice of VLS. With the advance of technology and the popularity of media among the youngsters nowadays, the students

seemed to take advantage of the media as a means of acquiring English vocabulary. This is shown by the highest mean value for the statement 'I use English language media' in the metacognitive strategies category (3.800±0.094). In addition, with the availability of programmes in the English language via the prime internet platforms and streaming channels, students found that acquiring English vocabulary had become more fun, contemporary and less monotonous compared to the traditional memorize and recall method. Thus, with the contexts provided by the media, they were able to self-test the word knowledge (3.453±0.086) seemingly by guessing the meaning of the new vocabulary through context. This is in line with previous studies that noted the use of media and guessing the meaning from context as the dominant strategies, especially among high proficient students (Asgari & Mustapha, 2011; Hamzah et al., 2009; Mutalib, Kadir, Robani & Majid, 2014). Realising the importance of having a good vocabulary size of English for their study, these students did not usually 'skip or pass unknown words' (2.907±0.092). Instead, most CLIL students would continue to study word overtime as another strategy that can assist them in acquiring vocabulary in English (3.223±0.093).

The Memories Strategies category comes second in the students' preference of VLS. It seems that the students depended largely on recalling and connecting the vocabulary that was already in their repertoire when acquiring new vocabulary. This is shown by the high mean values for the statements 'I connect word to the words that I already know' (3.761±0.090) and 'I connect word's meaning to a personal experience' (3.576±0.089). A closer look at the strategies employed indicates that students tended to recall and apply their linguistic knowledge, and use word association strategies in learning new English vocabulary. This is apparent in the rather high mean values in the following statements: 'I analyse and study parts of speech.' (3.300±0.096), 'I analyse and study affixes and roots.'(3.176±0.010), 'I study words with a pictorial representation of their meaning.' (3.307±0.096), 'I imagine the word's meaning.' (3.507±0.092), and 'I connect words to synonyms and antonyms.' (3.561±0.095). This differs from Komol and Sripetpun's (2011) study on Thai students' choice of VLS. The findings pointed out the students' preference to reconstruct the meaning in their own words by paraphrasing a word's meaning to help them remember the new word better. In the present study, however, this strategy is not very popular among the students as it only scores the mean value of 2.953±0.091, which is one of the lowest scores in the memories strategies.

The Social Strategies comes third in the list of VLS preference among the students. The analysis indicates that the students did not really prefer learning vocabulary with and from other people. As students nowadays are very IT-savvy, they seem to prefer learning new vocabulary from the Internet rather than from friends or lecturers. This is shown by the high score in the statement 'I look for extra English information through the Internet to learn new vocabulary items (3.653±0.101) compared to other strategies involving interaction with other people. For example, 'I ask lecturer for the meaning,' and 'I study or practice meaning in a group' were less preferred by the students with the mean values of only 2.884±0.105 and 2.923±0.103 respectively. Interacting with native speakers was the least employed strategy reported with only 2.652±0.104 means value. This is not surprising as not many of the students had the chance to interact with native speakers within their current social context. However, it is worth noting that among the social strategies that involved interaction with other people, asking classmates or friends for the meaning of a new word was the most preferred strategy among the students (mean value =3.653±0.095). This is in line with the findings from studies that students tend to seek their friend/classmate to help them understand the meaning very well and this strategy seems to be relevant for the weak students (Mutalib et al., 2014; Rojananak and Vitayapirak, 2015).

The next preferred category of strategies employed by the students is Determination. Under this category, the students would use a variety of methods to help them learn and acquire new English vocabulary. Based on the analysis, the most preferred strategy was using a bilingual dictionary (mean value=3.153±0.099). This is in line with studies conducted by Asgari & Mustapha (2011) and Noor & Amir (2009) which also indicate the use of a dictionary as the most preferred strategy of their vocabulary learning. Other strategies highlighted by the students under this determination dimension include guessing the meaning of new words (mean value=3.108±0.09) and guessing the meaning from aural features, such as stress, intonation, pronunciation, to discover the meaning of new words (mean value=2.907±0.092).

The analysis indicates that the least preferred category of VLS was the cognitive category. It can be inferred from the mean values that the students did not really like doing activities that can be considered as traditional when learning vocabulary. It can be clearly seen that activities such as using word lists, keeping vocabulary notebook, using flashcards, using vocabulary learning textbook, and writing words repeatedly scored only 2.900±0.101, 2.484±0.103, 2.161±0.099, 2.6385±0.10245, and 2.707±0.118, respectively. On the other hand, the mean values were higher for strategies that involved physical activities, that could make them more alert and active during the learning process such as 'listening to tape (or CD or MP3) of word lists' (3.376±0.086), 'practising word through physical activity' (3.361±0.100), 'practising word through verbal repetition' (3.115±0.094), and 'taking notes in class' (3.000±0.093).

Overall, the analysis indicates that students preferred strategies that were related to the contribution of technology in the learning process, in line with the nature and interest of Generation Z. In addition, students preferred strategies that involved physical activities that could promote active learning and those that could connect to their knowledge and experience. Strategies that were considered traditional and outdated were less employed by the students. Table 3 shows the five vocabulary learning strategies most employed by the students while Table 4 shows the opposite.

Table 3. Five Vocabulary Learning Strategies Most Employed by Students

Strategies	Category	Mean
I use English language media	Metacognitive	3.8000
I connect word to the words that I already know	Memories	3.7615
I look for extra English information through the Internet to learn new vocabulary items.	Social	3.6538
I connect a word's meaning to a personal experience.	Memories	3.5769
I connect words to their synonyms and antonyms.	Memories	3.5615

Table 4. Five Vocabulary Learning Strategies Least Employed by Students

Strategies	Category	Mean
I practice words using flash cards.	Cognitive	2.1615
I keep a vocabulary notebook.	Cognitive	2.4846
I use a vocabulary learning textbook.	Cognitive	2.6385
I write words repeatedly.	Cognitive	2.7077
I interact with native speakers.	Social	2.6523

3.2   Relationship between Vocabulary Learning Strategies and Academic Performance

The overall student academic performance across various academic subjects is measured by the score in the Grade Point Average (GPA) for a particular semester or Cumulative Grade Point Average (CGPA) for all semesters in their study. The calculation of GPA and CGPA includes all courses taken that count towards the diploma or degree. In Malaysia, the score ranges between 0.00 (the lowest) to 4.00 (the highest). Table 5 shows the scores of GPA/CGPA and their grade indication, and the number of students involved in this study.

Table 5. GPA/CGPA and Grade Indication

GPA/CGPA	Grade	No. of Students
3.50 – 4.00	A	21
3.00 – 3.49	B	72
2.50 – 2.99	C	37
2.00 – 2.49	D	0
< 2.00	E & F	0

The present study categorizes the levels of students' academic performance as Outstanding/Excellent, Good and Fair as all of the participants had obtained the CGPA between 2.50 to 4.00 (21 students scored 3.50-4.00, 72 students scored 3.00-3.49, and 37 students scored 2.50-

2.99). None of them scored below Grade C which is the cutoff grade for passing the course. To determine these levels, Best's (1977) procedure as shown below was employed.

$$\frac{\text{Higher score} - \text{Lower score}}{\text{Number of levels}}$$

Thus, having calculated the participants' scores based on the procedure, the level of academic performance was categorized into three levels as shown in Table 6.

Table 6. Levels of Academic Performance

Mean Score	Academic Performance Level
3.50 – 4.00	Outstanding/Excellent
3.00 – 3.49	Good
2.50 – 2.99	Fair

The paired sample test ($p<0.05$) was carried out to evaluate the relationship between students' academic performance and the vocabulary learning strategies employed. Table 7 shows the results of the test for all categories of the strategies employed by the students.

Table 7. Correlation Value between Academic Performance and Learning Strategies

No	Statement	P value
Cognitive Strategies		
1	I practise words through physical activity.	0.132
2	I use word lists.	0.374
3	I practise words through verbal repetition.	0.144
4	I write words repeatedly.	0.821
5	I keep a vocabulary notebook.	0.374
6	I practise words using flash cards.	0.510
7	I study words by taking notes in class.	0.172
8	I utilise vocabulary section in a text book.	0.208
9	I listen to tape (or CD or MP3) of word lists.	0.191
10	I use a vocabulary learning textbook.	0.755
Memories Strategies		
1	I analyse and study parts of speech.	0.035
2	I analyse and study affixes and roots.	0.054
3	I study words with a pictorial representation of its meaning.	0.327
4	I imagine the word's meaning.	0.156
5	I connect a word's meaning to a personal experience.	0.064
6	I connect words to the words that I already know.	0.038
7	I connect words to their synonyms and antonyms.	0.047
8	I group words together to study them.	0.167
9	I use new words in sentences.	0.029
10	I use new words in English conversation.	0.131
11	I study the spelling of the word.	0.083
12	I study the sound of the word.	0.338
13	I say a word aloud when studying.	0.254
14	I use Keyword Method.	0.274
15	I paraphrase a word's meaning.	0.908
16	I learn the words of an idiom together.	0.633
Social Strategies		
1	I ask lecturers for the meaning.	0.596

Cognitive Strategies		
No	**Statement**	**P value**
2	I ask classmates or friends for the meaning.	0.098
3	I study or practice meaning in a group.	0.206
4	I interact with native speakers.	0.862
5	I look for extra English information through the Internet to learn new vocabulary items.	0.018
Metacognitive Strategies		
1	I use English language media.	0.031
2	I self-test word knowledge.	0.111
3	I skip or pass unknown words.	0.206
4	I continue to study words over time.	0.190
Determination Strategies		
1	I use a bilingual dictionary.	0.089
2	I use a monolingual dictionary.	0.577
3	Guess the meaning from word classes, such as noun, verb, adjective, adverb, to discover the meaning of new words.	0.862
4	Guess the meaning from the grammatical structure of a sentence to discover the meaning of new words.	0.206
5	Guess the meaning from aural features, such as stress, intonation, pronunciation, to discover the meaning of new words.	0.862

The analysis indicates that most of statements under Memories Strategies accept H_1. These include the statements 'I connect word to the words that I already know' (significant value=0.038, $P<0.05$), 'I use new word in sentences' (significant value =0.029 $P<0.05$), 'I connect word's meaning to a personal experience.' (significant value=0.064 $P<0.05$)', 'I study the spelling of the word' (significant value=0.083 $P<0.05$), I connect word to its synonyms and antonyms.' (significant value=0.047 $P<0.05$), 'I analyse and study parts of speech.' (significant value=0.035 $P<0.05$)' and 'I analyse and study affixes and roots.' (significant value=0.054 $P<0.05$). As for the rest, only one statement under the Social Strategies, one statement under the Metacognitive Strategies, and one statement under the Determination Strategies accept H_1: 'I look for extra English information through the Internet to learn new vocabulary items.' (significant value=0.018, $P<0.05$), and 'I use English language media' (significant value=0.018, $P<0.05$) (significant value=0.031, $P<0.05$), 'I use bilingual dictionary.' (significant value=0.089, $P<0.05$) respectively. With most of the students in the present study are in the Grade B achievers group, the findings are aligned with Khalifa et al.;s (2015) study which reported that most of medium achievers used the Memories Strategies, followed by Social Strategies, Cognitive Strategies, and Metacognitive Strategies.

4.   Conclusion

This study is a documentation of the vocabulary learning strategies from the CLIL students' perspectives. It is found that the metacognitive strategies and cognitive strategies were the most preferred and least preferred strategies, respectively, among the students. It is important to note that the choice of these strategies was largely to do with the nature of the students' generation, among which the internet and information technology plays a significant role in the education and the learning process. With the choice of information at the fingertips, the traditional strategies like referring to books and lecturers seem to have become less preferred

Since most of vocabulary teaching in the classroom is normally supplementary, the findings of this study can provide a direction for instructors in enhancing their vocabulary teaching techniques and in designing any intervention program for the new generation to enhance their vocabulary acquisition. Future research could include other groups of HEI such as Research University and Focused University and other courses in the same university to investigate whether there are any differences in the implementation of CLIL.

5.   Co-Author Contribution

Kamisah Ariffin is the principal author and contributed to the introduction and literature review and scope of study. Nur Asmaliza Mohd Noor is the corresponding author, who contributed data analysis and discussion. Asmidar Alias contributed to research methodology, data entry and conclusion of this paper

6.   Acknowledgements

7.   References

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