

DIRECT LEARNING STRATEGIES EMPLOYED IN LEARNING ENGLISH AMONG STUDENTS OF ENGINEERING TECHNOLOGY

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Abstract

Researchers have been focusing on language learning strategies in order to comprehend how learners learn language. Due to that, this study was conducted to understand the most preferred type of direct language learning strategies by the Engineering Technology' learners. Memory, cognitive and compensation are the three types of direct strategies. For data collection of this study, questionnaire was employed and the questionnaire was adapted from Strategy Inventory of Language Learning (SILL) [14]. As for data analysis, Statistical Package for the Social Science (SPSS) software was utilized. Results from the data analysis of this research portrayed high preference of cognitive strategy among the students of Engineering Technology. The second most preferred learning strategy was *memory* while *compensation* was the least preferred learning strategy. These results portray that the students of Engineering Technology prefer to exercise their mind by thinking on how to acquire language better. Nevertheless, *memory* learning strategies are still employed by the respondents as there are certain elements which require them to memorize such as grammar rules. The least preferred language learning strategy was *compensation* learning strategies. In brief, students employed many language learning strategies but there are certain strategies which highly preferred as they are comfortable using them.

Index Terms-- Memory learning strategies, Cognitive Learning Strategies, Compensation Learning Strategies, Direct Learning Strategies, Engineering Technology, Strategy Inventory of Language Learning (SILL), Language Learning Strategies

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INTRODUCTION

Language learning strategies have been studied for quite some time. In fact, from the late 1970s and early 1980s researchers have started actively investigated on language learning strategies [23] and in recent decades, the focus is on learners and learning rather than other elements [28]. However, it has never stopped as students come from different background and due to that, study on language learning strategies is still relevant. Teachers have to provide effective learning activities and they have to find out learners' preference learning strategies. By having the information about students' preferred language learning strategies will help teachers in designing activities to suit majority of them. Nevertheless, this study covered on the direct learning strategies employed by the Engineering Technology' students.

There are four factors on Individual Differences in second language research, but learning strategies have been given special attention [1]. In addition, language learning strategies also is among the influencing factors in individual language ability (Chilkiewicz, 2015). Furthermore, knowing learners' preferred learning strategies is significant because by providing preferred learning strategies, learners can be motivated to learn and be more effective in learning language [3]. There were also researchers who also recommended the relevancy of learning strategies toward language learning strategies [2];[4]. In fact, the way or method used by learners in completing any task given make them better learners [5]; [6]; [7]; [8] and [9]. It was also agreed that appropriate learning strategy affects learners' language ability [24]. Hence, this shows the significance for lecturers to find out learners' preference of language learning strategies in language learning. Research on learning strategies organized from 1970s to 2009 have been reviewed [10] and in 1970s, learning strategies studies highly focused on cognitive

psychology, but towards the end the focused was shifted to the comparison of each learning strategy as per category. The following era of 1980s was dominated by the studies which involved successful learners on learning strategies employed by successful learners. In 1990s, focus was inclined to the influenced factors in selecting learning strategies that work best for learners. Nevertheless, researchers still focus on categories of language learning strategies because of the significant function in identifying the success of learners' language acquisition and achievement [11].

Moreover, language learning and teaching have started to shift towards learners instead of lecturers for the past twenty years [12]. Thus, primary focus is learning process, including the strategies employed by learners in learning language [13]. Hardan[12] also concludes that there are four categories of elements which researchers investigated related to language learning strategies. The first element is the identification, description, and classification of strategies, while the second element is frequency use and learners' success of using learning strategies. The third element is differences in language proficiency, age, gender and cultural background, and lastly is the impact of language strategy training on the outcome which is learners' language performance. Hence, this study directly covers the first element up to the third element of categories by Hardan.

Language learning strategies have been defined in different perspectives. For example, Rubin [2] classified learning strategies as devices or techniques used by learners, while Naiman[27] focused on the method used by the learners in order to fulfil the task given to them. Prior to that, O'Malley, Chamot, Stewner-Manzanaraes, Kupper and Russo [26] defined language strategies as procedures or steps used by learners that facilitate the process

to acquire, store and retrieve or use of information. To differentiate with other definitions, Oxford [14] emphasized language learning strategies by the learners' actions taken to create more successful language learning, independence and fun.

Oxford's Taxonomy consists of direct learning strategies and indirect learning strategies [16], with both strategies are equally important. The direct learning strategies comprise of three strategies namely *memory*, *cognitive* and *compensation* which have direct impact to language learning. In contrast, indirect strategies enhance language learning even though they do not have direct connection to language use. The indirect learning strategies are *metacognitive*, *affective* and *social* strategies. In total there 62 specific strategies with 19 secondary strategies in each six main language learning strategies.

Firstly, *memory* learning strategies in specific comprise of four details of strategies which are creating mental linkages, implying images, reviewing well and employing actions. In addition, each component in *memory* strategy is accompanied with between one to four details strategies such as implying images contain details strategies such as using imagery, semantic mapping, using keywords and represent sounds in memory. Figure 1 shows the details of direct language learning strategies.

The second direct language learning strategy is *cognitive* learning strategy. This strategy involves thinking process with sub-strategies which are practicing, receiving and sending messages, analyzing and reasoning, and creating structure for input and output. For example, sub-category of receiving and sending message contains getting the idea quickly and using resources for receiving and sending messages. Each sub-category of *cognitive* learning strategy comprises of different number of details strategies. In brief, this learning strategy is prone to manipulating learning materials directly in translation, note taking, summarizing, transferring and highlighting [17].

For compensation learning strategy, it incorporates only two sub-strategies and they are guessing intelligently and overcoming limitations in speaking and writing. For guessing intelligently, learners are able to utilize linguistic clues and other clues. Nevertheless, if learners determined to overcome limitations in speaking and writing, they may try the strategy such as speaking in their first language. Besides that, learners may obtain help from others, or they may use their facial expression or gestures. Learners may try to avoid to communicate either partially or totally. Selecting certain topic to talk about could also be employed as the learning strategies, instead of adjust or approximate the message, or use synonym to find simple words to use.

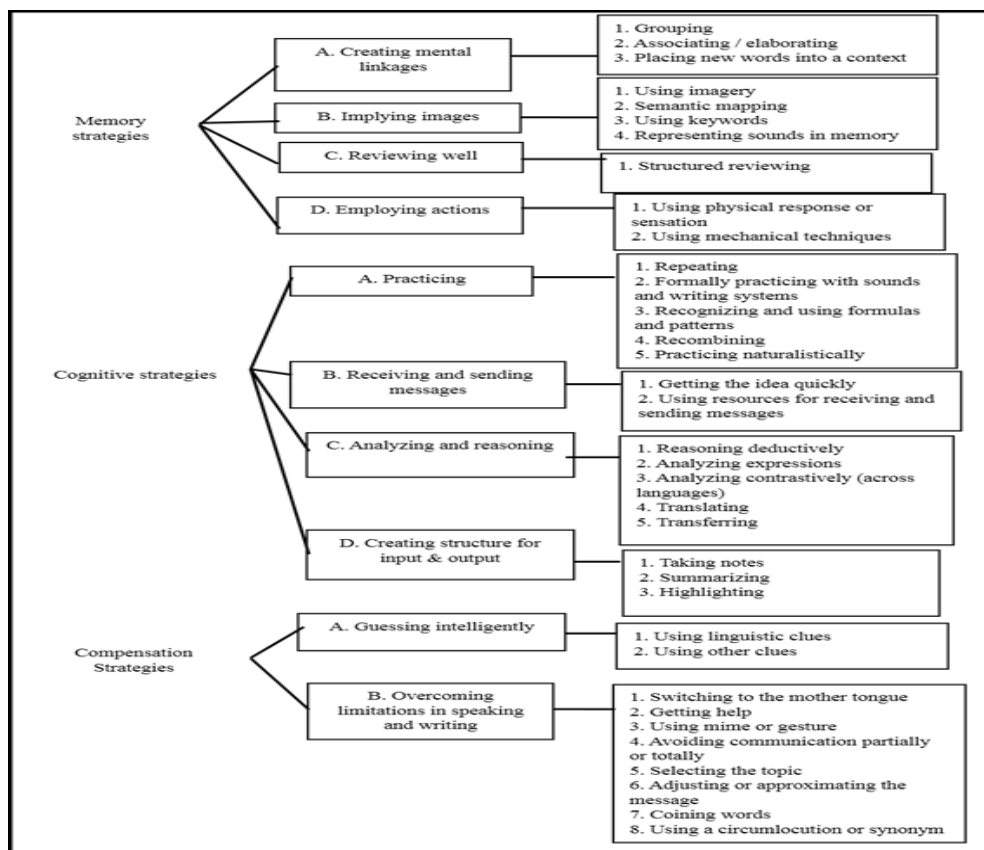


Figure 1. Direct language learning strategies

In a research conducted with 110 second language learners of Thai students, high frequency used of *compensation*, *cognitive* and *metacognitive* was found [18]. While in a study which involved the tertiary and secondary ESL students in China, *compensation* strategies were employed the most [19]. Another study which included 175 ESL students from China, the learners demonstrated their major preference to use *metacognitive* and

compensation strategies [20]. The same finding was discovered in Taiwan which 335 college students were mostly in favour of employing *compensation* strategies in their language learning [21]. In another study which involved 1191 EFL elementary students in Taiwan, the three most preferred language learning strategies were *affective*, *compensation* and *social* [22]. The study employed questionnaire, vocabulary performance test and interview.

Hence, based on these studies which involved Asian students, the preferred language learning strategies are not consistent. This might be due to various factors which influence the learners to choose their most preferred learning strategies. One of the factors could be the culture of learners, the trend and the policy of the country itself that might be different from the other. Furthermore, the difference in era which nowadays students are equipped with latest technology might contribute to the changes of preferred learning strategies.

RESEARCH METHODOLOGY

In order to obtain the data for this research, questionnaire was employed and the questionnaire was adapted from an established questionnaire which is Strategy Inventory of Language Learning (SILL) version 7.0 by Oxford [14]. The questionnaire was divided into two main parts which were part A for demographic data, while part B was on the items related to *memory* learning strategy, *cognitive* learning strategies and *compensation* learning strategies which each statement is accompanied by five-Likert Scale. The questionnaire has undergone for pilot test and the Cronbach Alpha for *memory* was 0.80, *cognitive* was 0.78, and *compensation* was 0.68. With the results of Cronbach Alpha between 0.6 and 0.80, the questionnaire is good to be used for the study. As for the respondents, there were 146 students participated voluntarily in the study and they were students from bachelor in Engineering Technology. They were in semester 2 and 3 from the three programs involved which were Quality Engineering (BQE), Instrumentation and Control Engineering (BICE), and also Facilities Maintenance Engineering (BFaME. In brief, only students in semester 2 and semester 3 from Bachelor of Engineering Technology involved in this study.

FINDINGS

The data obtained was analyzed statistically by using Statistical Package for Social Science (SPSS). Based on the finding, there were 97 male students (66.4 percent) and 49 female students (33.6 percent). This portrays that male students outnumbered female students in these three programs. In terms of number of respondents according to program, BICE dominated the number of students with a total of 66 or equivalent to 45.2 percent. It was followed by the respondents from BFaME with 44 students, while BQE students were represented with 39 students. As according to semester, most of the respondents were from semester III (99 respondents, 67.8 percent). Among the three types in direct learning strategies, *cognitive* learning strategies were the most preferred learning strategies among the Engineering Technology (M = 3.47, SD = .94), and it is followed by *compensation* learning strategies (M = 3.41, SD =.97). The least preferred direct learning strategies is *memory* strategies (M = 3.15, SD = .95).

A. Memory Learning Strategies

In order to analyze the items in Memory Learning Strategies, range of mean was categorized according to three levels which are low ($1.0 \leq M \leq 2.4$), medium ($2.5 \leq M \leq 3.4$) and high ($3.5 \leq M \leq 5.0$) [6]. Memory strategies consist of nine items ranging from item 1 to item 9, and most of the items are considered as medium level of usage. Table 1 exhibits the details of Mean scores and Standard Deviations for all items in *memory* learning strategies.

Table 1. Mean and Standard Deviation for Memory Learning Strategies

No	Items	Mean	SD	Level of Usage
1	I think of relationships between what I already know and new things I learn	3.44	.80	Medium

	in English.			
2	I use new English words in a sentence so I can remember them.	3.29	.92	Medium
3	I connect the sound of a new English word and an image or picture of the word to help me remember the word.	3.42	.91	Medium
4	I remember a new English word by making a mental picture of a situation in which the word might be used.	3.57	.88	High
5	I use rhymes to remember new English words.	2.95	1.11	Medium
6	I use flashcards to remember new English words.	2.57	.96	Medium
7	I physically act out new English words.	3.06	1.03	Medium
8	I review English lesson often.	2.85	.89	Medium
9	I remember new English words or phrase by remembering their location on the page, on the board, or on a screen sign.	3.25	1.02	Medium

The finding shows that *memory* learning strategies are categorized as medium level of usage with M=3.16. This portrays that most of the students used this strategy moderately. This could be the influence of Engineering Technology subjects which require students to understand the concept and formula rather than memorizing each important information. There are nine items in *memory* learning strategies, and one of the items is categorized as highly preferred by the BET learners (M = 3.57, SD = .88). The strategy is *I remember a new English word by making a mental picture of a situation in which the word might be used (item 4)*. With this highest Mean score, this portrays that this strategy is highly used by the respondents. The second highest Mean is item 1 (M = 3.44, SD = .80) which represents that the respondents *sometimes relate the knowledge that they already have with the new things they learn*. Apart of that, they also used *new English words that they learn in sentences as the way to remember them* (item 2, M = 3.42, SD = .91). The least use of strategy in *memory* strategy is *using of flashcard to remember new English word* (item 6, M = 2.57, SD = .96). In average, the Mean score for *memory* strategy is 3.16 which can be considered as medium level of usage.

Asian students were discovered as students who like to memorize words from books because they believed that books provide knowledge which they can obtain [15]. On the other hand, this study presented a different finding from both previous studies and this could be due to the differences of era. The era of 1980s and 1990s, printed materials were the source of information and students at the era have to go to library to search for the information. Nowadays with the Internet and other technology, information is available all the time and it is easily accessible. Hence, memorizing is no longer the most significant strategies in language learning. That could be the reason why *memory* learning strategy is ranked as learners' second preferred direct learning strategies in this study. Engineering technology students of UniKL MITEC might be in favor of using technology as information is accessible at any time to compensate of having to employ *memory* learning strategies.

In brief, the Mean scores and Standard Deviations show that engineering students of UniKL MITEC highly preferred to *make mental picture on the word they might use in the situations*, as they felt that strategy is effective as compared to others. The students associate the word with picture in their mind as the way to remember the word. That is how the learners learn language nowadays. Apart of that they also relate to what they already know with new things that they learned. Having tacit knowledge will enhance learning process and some of the respondents employed the strategy in their language learning. Again, with the current technology memorizing is no longer preferred strategy among the current generation. The students of engineering technology inclined to use *memory* strategies moderately as compared to other learning strategies.

B. Cognitive Learning Strategies

Cognitive strategies consist of 14 items ranging from item number 10 to items number 23. Table 2 shows the details Mean score and Standard Deviation for each item in this domain. Based on the Mean score for each item, there are five items with Means in the category of high level of usage. The items are item 11, 12, 15, 16, and 18. Among these items, the highest Mean is item 15 (*I watch English language TV shows spoken in English or go to movies spoken in English*) (M = 4.20, SD = .89), followed by item 11 (*I try to talk like native English speakers*) (M = 3.74, SD = .89), and item 18 with the strategy *skimming an English passage (read over the passage quickly) then go back and read carefully* (M = 3.72, SD = .94). The highest Mean shows that respondents always or usually employed the strategies in language learning.

Table 2. Mean and Standard Deviation for Cognitive Learning Strategies

No	Items	Mean	SD	Level of Usage
10	I say or write new English words several times.	3.25	.94	Medium
11	I try to talk like native English speakers.	3.74	.89	High
12	I practice the sounds of English.	3.69	.92	High
13	I use the English words I know in different ways.	3.48	.90	Medium
14	I start conversations in English.	2.90	1.05	Medium
15	I watch English language TV	4.20	.89	High

	shows spoken in English or go to movies spoken in English.			
16	I read for pleasure in English.	3.64	.95	High
17	I write notes, messages, letters, or reports in English.	3.38	1.01	Medium
18	I first skim an English passage (read over the passage quickly) then go back and read carefully.	3.72	.94	High
19	I look for words in my own language that are similar to new words in English.	3.45	.96	Medium
20	I try to find patterns in English.	3.16	.89	Medium
21	I find the meaning of an English word by dividing it into parts that I understand.	3.32	.90	Medium
22	I try not to translate word-for-word.	3.36	1.03	Medium
23	I make summaries of information that I hear or read in English.	3.27	.90	Medium

The respondents also *try to talk like native speaker of English* (item 11), and in addition they employed *reading very quickly and read again carefully* (item 18). These two strategies were classified as high usage and this portrays that the students always use these strategies. However, the lowest Mean score demonstrated that the students of engineering technology *sometimes start a conversation in English* (item 14). This strategy is the least used by the respondents as compared to other strategies in *cognitive* learning strategies, even though the mean score is in the range of medium usage of strategy (M = 2.90, SD = 1.05). Nevertheless, in average, the Mean for *cognitive* learning strategies is still in the range of medium level of usage (M = 3.47, SD = .94) and it is the second highest preferred language learning strategies employed by the respondents.

Based on the finding, the students of Engineering Technology prefer to employ strategy which enables them to be independent. This is because their first preference learning strategy in *cognitive* learning strategies is *watching television on English spoken programs* (item 15) as shown in Table 2. This generation takes advantage of the existing English spoken programs available on television such as English comedy drama and cartoons, or they go for English movies. To support the first preference, the respondents practice *to speak like the native English speakers* (item 11). Watching English spoken program and movies enable them to acquire the accent of native speakers. Students at their age are in favour of entertainment and watching television and movies fulfil their excitement on entertainment as that can make them relax and happy. Apart of that, they also

prefer to practice the sound of English as to have certain accent might make them feel good and to be an attention among friends. The students might use the advantage of watching English spoken program on television or English movies to help them to practice their pronunciation.

Furthermore, there are other sources on Internet such as YouTube which will definitely supply various accents of English. Apart of that, with the existing of Internet and technology, online application such as online dictionary is accessible easily. Thus, instead of television, Internet is widely used by the current generation and become their source of information. Lecturers should take advantage of the technology to meet with the students' preferred language learning strategies which not only on speaking and listening but also on reading as reading English materials for leisure is also has high score mean based on Table 4.16. There is huge amount of materials for reading available on the Internet. Hence, the use of internet for reading could be embedded as part of the teaching and learning activities in teaching the students of engineering technology.

C. Compensation Learning Strategies

Compensation learning strategies consist of only six items from SILL. There are three items with Mean scores are in range of high usage of strategy, while the other three items are categorized as medium usage of strategy. The highest Mean score in *compensation* learning strategies is item 24 (M = 3.75, SD = .90) which learners *guess on the unfamiliar words*. This is followed by item 25 which learners *use gestures for the words that they could not think of* (M = 3.63, SD = 1.00). The third most preferred language learning strategy employed by the respondents is item 29 (M = 3.60, SD = .87) which they *use word or phrase that have the same meaning*. The other three items show medium level of usage according to Means. The lowest Mean is item 26 (M = 2.97, SD = 1.05) where they *create new words if they do not know the correct words in English*. Another least *compensation* strategy used by the respondents is *reading in English without checking up every new word* (item 27, M = 3.13, SD = 1.04). In average, the Mean for *compensation* strategies shows that this strategy is moderately employed by the respondents (M = 3.41, SD = .97).

Table 3. Mean and Standard Deviation for Compensation Learning Strategies

No	Items	Mean	SD	Level of Usage
24	To understand unfamiliar English words, I make guesses.	3.75	.90	High
25	When I can't think of a word during a conversation in English, I use gestures.	3.63	1.00	High
26	I make up new words if I do not know the right ones in English.	2.97	1.05	Medium
27	I read English without looking up every new word.	3.13	1.04	Medium
28	I try to guess what the other person will say next in English.	3.36	.94	Medium
29	If I can't think of	3.60	.87	High

	an English word, I use a word or phrase that means the same thing.			
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In brief, it can be said that Engineering Technology students with high level of *compensation* strategies tend to guess the meaning of unfamiliar word according to context (item 24). This is in fact one of best strategies to improve vocabulary. Furthermore, it could be less efficient if they have to open up dictionary every time they come across new words. Respondents also like to employ gestures to replace words that they do not have. This could be due to the assumption that gestures are easy to be interpreted as that is part of body language. Apart of that and to support the strategy of guessing meaning based on context, another strategy was employed by the respondents which is *use other words or phrase with similar meaning when they could not find the correct word to be used* (item 29). *Reading English without looking up every new word that they found* (item 27) is another good strategy for vocabulary and this is ranked as the two least preferred strategy among the respondents of this study. Language learners should employ this strategy more often as this is one of the best ways to acquire more vocabulary. This strategy was used occasionally and the Mean score shows that this strategy is at the range of medium level of usage. Hence, it could be assumed that the students of Engineering Technology used *compensation* strategies quite extensively since the average Mean score is at medium level of usage.

Compensation is the third most frequent strategies used by the students of Engineering Technology and this describes the strategies used such as guessing from context, use of gestures, use of word or other phrases, predict what other people will say, reading without referring to dictionary and creating new words when they could not find the correct word. The strategy of guessing the meaning from unfamiliar word is considered as one of the characteristics of Asian learners^[19].

Apart of that, it also portrays that the engineering students of UniKL MITEC like to guess the words that they do not understand the most. Furthermore, having to refer to dictionary every time they find unfamiliar words will interrupt their reading enjoyment and students do not bring dictionary wherever they go. Even though nowadays dictionary application for mobile phone is available, not many students install the application. It shows that students would prefer to guess the meaning according to context rather than to flip a dictionary. They are also in favor to use gestures for words that they cannot think of. *Compensation* language learning strategies are the third most preferred learning strategies employed by the respondents. In addition, good language learner should be willing to employ strategies such as guessing meaning from context^[2]. Majority of the learners involved in this study was at moderate level of language proficiency, and the their least preferred learning strategy was *compensation* strategy. Hence, this shows that an agreement that good language learners use *compensation* as their first or most preferred learning strategies. As for this study with intermediate language users, *compensation* strategies were their least preferred.

CONCLUSION

According to the finding of this study, majority of the Engineering Technology students were highly in favour of *cognitive* learning strategies as it received the highest Mean score as compared to *memory* learning strategies and *compensation* learning strategies. By knowing this, teachers or lecturers should be aware that class activities should have more elements which relate to *cognitive* activities such as giving presentation, debate, forum, and it

should also involve writing exercise. The respondents also seem to be highly in favour of trying to talk like native speakers of English. To use this strategy, the lecturers may design a task which provide opportunity for them to use the language, for example to conduct interview or to present a role play in class. In addition, the use of social media should be enhanced since the students nowadays are using it actively. In brief, knowing students' preferred language learning strategies could simplify the process of learning and teachers will be able to create class activities which suit the students. Even though it is not possible to entertain every strategy preferred by the students, but knowing their preference may ease the lecturers to provide better activities which lead to efficient language acquisition.

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