

USING VOCABULARY TEACHING METHODS ON IMPROVING STUDENTS' VOCABULARY LEARNING IN THE ONLINE CLASSROOM

1.0 Background of Knowledge

Vocabulary teaching methods play a prominent role in improving vocabulary learning in the online classroom. It is crucial to master vocabulary knowledge as it helps foster students' development of learning a huge number of words and comprehend well the content the students read. If students do not sufficiently expand their vocabulary knowledge, their reading comprehension will be influenced. Therefore, the mastery of vocabulary learning is the key for students to learn the languages and we must be able to motivate students to learn vocabulary in an interesting way. Therefore, having the right methods are important to teach the students especially if they are in three different proficiency groups. Thus the reason why three methods are used for the three different proficiency groups.

For low proficiency students, a grammar-translation method will be used. Proposed by Prof. Karl Plotz (1819-1881), the grammar-translation method is the oldest teaching method. In grammar-translation classes, students learn grammatical rules and vocabulary by translating sentences between the target language and the native language.

For medium proficiency students, an interactive and participative method or active and participatory method will be used. It is a form of a reflective teaching approach which is sometimes termed as interactive teaching method or learner-centered teaching method. In addition, digital tools will be used for this method to aid the students in learning and understanding better.

For high proficiency students, a silent method will be used. Proposed by Caleb Gattegno (1963), the Silent Way is based on the premise that the teacher should be silent as much as possible in the classroom but the learner should be encouraged to produce as much language as possible. Students are encouraged to be more independent and responsible in learning the language with little to no guidance from the teacher unless necessary.

1.1 Statement of Problem

Confucian Private Secondary School comprises students with different proficiency levels in the English language. These students have a different educational background and most of them studied in Chinese primary school. As the majority of students are Chinese-educated or from Chinese background, and the lack of an environment for the students to learn the English language, teaching the English language in this school becomes very challenging. The English teachers in the school tend to implement various teaching techniques and methodologies from time to time in order to meet the needs of students. However, not all teaching methodologies are effective for all students.

Besides, vocabulary is the foundation of the English language. It is the most important element in communication. Vocabulary is used to express an idea and transfer information. Based on the students' performance as seen in their writing and reading, the students in this school have poor vocabulary knowledge and lack of vocabulary to use in their writing. This could be a problem as this limits the students' ability to write better and limits the knowledge on vocabulary. So, teachers have to select the appropriate teaching methodologies based on students' proficiency level in teaching vocabulary in reading and writing.

1.2 Objectives of the Study

- i. To improve student's ability to use the language with appropriate vocabulary.
- ii. To enrich students' proficiency through different learning methods.
- iii. To study the effectiveness of the grammar-translation method, interactive and participative method and the silent method in teaching vocabulary.

2.0 Methodology

Students with different proficiency levels in English were involved in this study. Three methodologies were used in this study. The grammar-translation method was for the low proficiency students, the interactive and participative method was for the medium proficiency students while the silent method was for the high proficiency students.

2.1 The role of vocabulary in reading

As mentioned earlier, vocabulary is the foundation of the English language. In a study carried out by Lawrence Jun Zhang and Suaini Bin Annual (2008), it claimed that the role of vocabulary in reading comprehension is complex. Students' small vocabulary size does not enable them to cope with an expository text that contains low-frequency words. So, it can be seen that the depth of vocabulary knowledge is very important in reading comprehension.

2.2 Grammar-translation method

Grammar-translation method is usually applied in the teaching of reading and writing. By using grammar-translation method, students will be able to learn a lot of new vocabulary using their first language. This method has its strengths and weaknesses. Grammar-translation method is not interactive and it is teacher-centered. Students may not be able to interact with each other and this method does not help the students to develop their speaking skill. However, it helps the students to learn the language that they are not familiar with using translation. In addition, by using translation, this helps teachers to save a lot of time. In this study, the grammar-translation method is used for the purpose of helping the weak Chinese students to read in English language.

2.2.1 Participants and procedures

English language teachers are strongly encouraged to teach English through English in order to provide an adequate environment and setting to improve students' proficiency level. However, this is not always applicable to all students in Confucian Private Secondary School, especially those who have a low proficiency level. Time constraint is another factor to be considered. The English teachers have a very limited time to cover the school syllabus, so grammar-translation is very helpful in helping the students to understand and comprehend the teaching content.

The students have a Chinese education background and Chinese is their first language. These students have a low-proficiency level in English language. In this study, the English teacher spent two periods (100 minutes) conducting the reading lesson. These two lessons included the teaching of vocabulary and reading. The teaching of vocabulary was carried out before the teaching of reading.

In the first period, for pre-reading activity, before the students read the passage, the teacher chose fifteen words from the reading passage and asked the students to write those words in their notebooks. The teacher instructed the students to check the meaning of each word using the online Cambridge Dictionary. The students were required to write the meaning of each word in Chinese language. The students were given 20 minutes to complete the task.

Vocabulary 7: A Holiday Trip

Word / Phrase	Meaning
1. attractive	
2. metro cities	
3. admiration	
4. feast	
5. incessantly	
6. mind-boggling	
7. accommodates	
8. lurking	
9. staring (stare)	
10.adrenalin	
11.sanctuary	
12.rare species	
13.paradise	
14.numerous	
15.self-reliance	

After 20 minutes, the teacher discussed the meaning of words and phrases with the students. The students were required to list the meaning of each word or phrase in the chat box while the teacher checked for the accuracy of the meaning. Another 20 minutes was spent on vocabulary learning. In this stage, students learned about the meaning and pronunciation of the words and phrases. The teacher instructed the students to turn on the mike and pronounce the words and phrases. Next, for while-reading activity, students were required to read and understand the passage after class; it included synchronous learning. This was to enable the students to study in a self-paced manner.

In the second period, while-reading activity was going on, the students were asked to share about their experience of visiting Singapore. This step supported the students to make a connection between their experience and the passage. Then the teacher instructed the students to read aloud the passage and explain it in Chinese language. The purpose of doing this was to check on students' understanding. Lastly, for post-reading activity, the students were asked to complete the exercises in their workbooks including vocabulary and comprehension exercises in 30 minutes. After that, discussion was done through teacher-student interaction.

2.3 Interactive and Participative Method

An interactive and participative teaching method is a form of learning and communicative activity in which students are involved in the learning process and reflect on what they know and what they are thinking. It ensures full participation of students in the learning process, and which is a major source of learning. It helps teachers to focus on students' needs, abilities and interests. By using this method, both teachers and students can swap their roles and enable the students to actively engage in the learning process. Students will have high chances to use more vocabulary while sharing their ideas and be the center of the classroom.

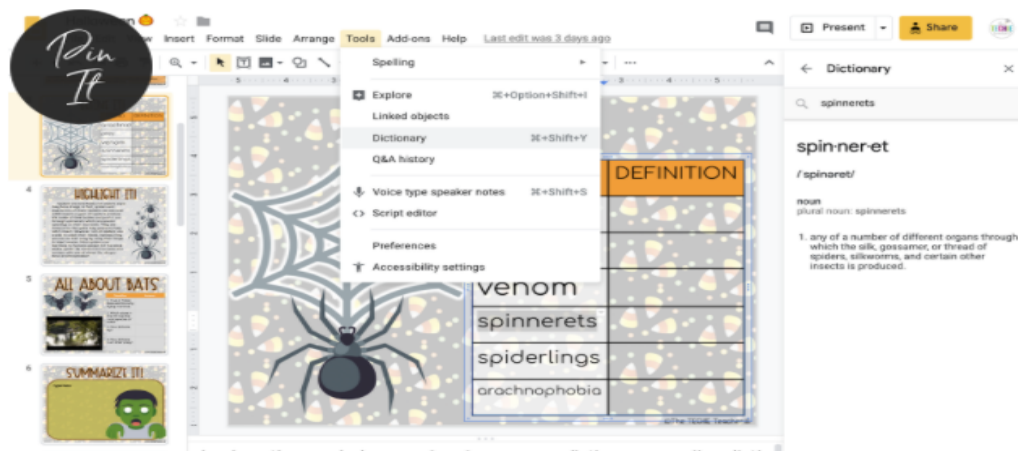
2.3.1 Participants and Procedures

The most important element involved in the language skill is vocabulary. However, the junior students in Confucian Private Secondary School with medium proficiency level often view vocabulary as a critical and problematic part of learning for them to adapt and use in a certain context or situation. A major cause of this mindset is because of a lack of understanding of abstract English words and being a second language learner, they have a limited vocabulary knowledge. Due to these complications, many students have difficulty in comprehending what they read and fail to express their ideas and concept of the particular subject.

In today's learning environment, digital tools help students to practice new vocabulary and build their essential skills: speaking, listening, reading and writing. One of the effective tools that can be used to teach vocabulary for medium level learners is **Wordart.com**. It is an excellent platform for students to utilize their knowledge and ideas using various vocabulary in a wide range. As a pre-activity of the lesson, students are required to predict the content of the comprehension passage and meaning of the words based on the vocabulary given in the Wordart. Students share their prediction and understanding in their own words with little guidance from the teacher.



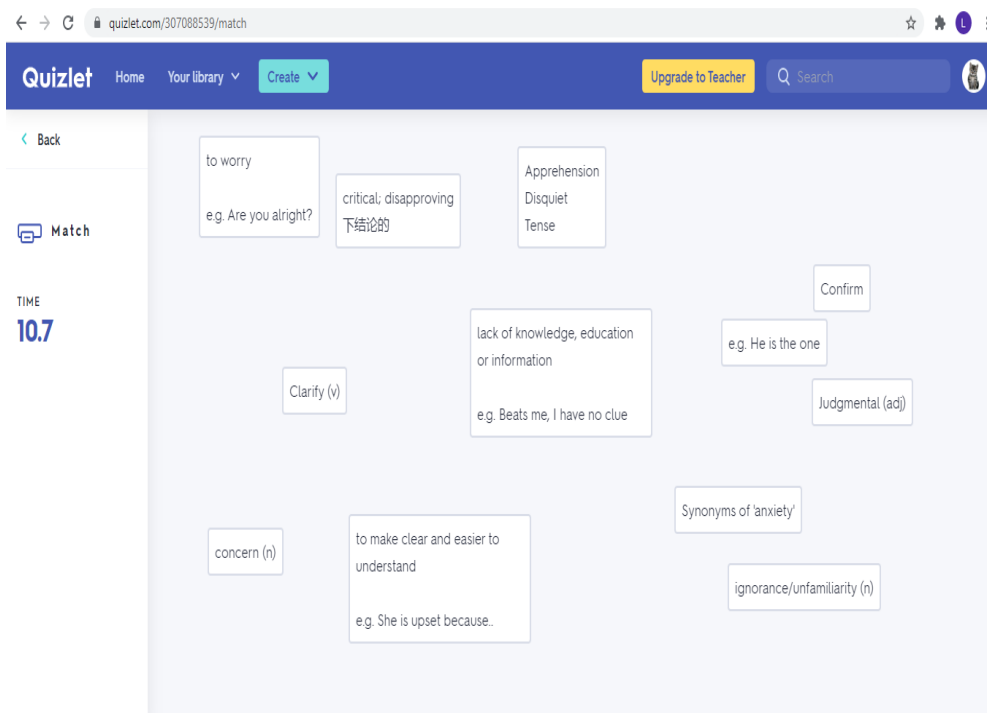
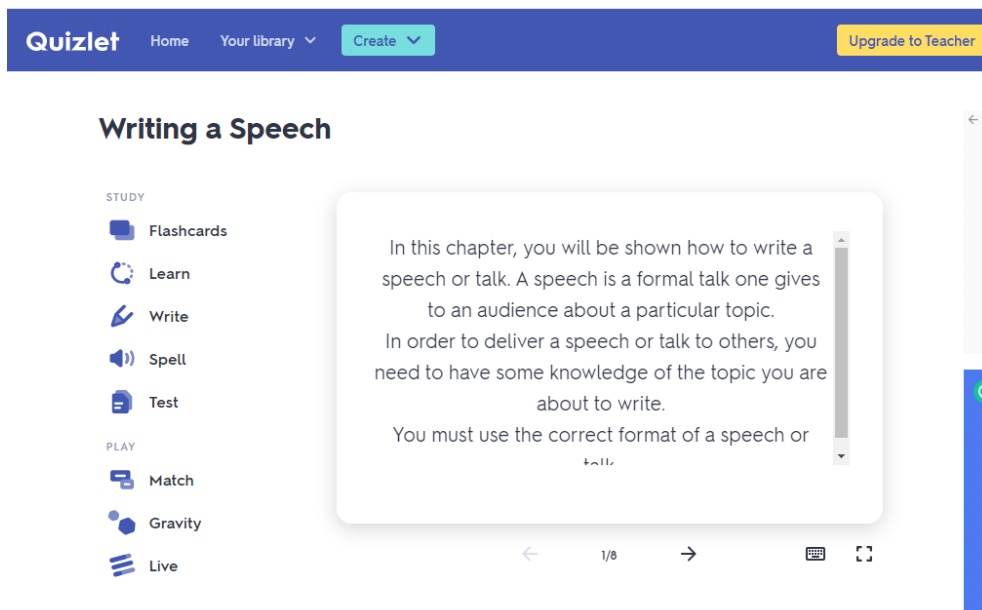
Followed by, students are required to read out the entire passage (UEC Workbook pg. 63,64) to confirm the accuracy of their predictions and before proceeding with further explanation, the teacher asks students to list down the words that they find difficult to understand in the chat box (Google Meet) so that they can discuss the meaning of those complicated words together. This will help the students to have a clearer picture and understanding of what the passage is all about. Afterwards, the teacher explains about instructions for the following task. In this activity, students are required to fill in the table consisting of vocabulary words with correct definitions using the **Online Dictionary** in a **Google Docs**. Refer to the following steps:



- (1) Open Google Docs
- (2) Go to tools
- (3) Click on dictionary
- (4) Type out the word

A sidebar will automatically pop up containing the definitions, part of speech and pronunciation. It is really a useful tool which allows students to check the meaning of words and understand the use or function of it as they are required to fill in the table on their own. The third part of the lesson is getting verbal responses from students where the teacher randomly picks a few students to repeat the vocabulary words and definitions and asks them to try to comprehend the definitions with synonyms or with their own words. Next, as further explanations to the lesson, the teacher highlights that there are several meanings of one word and follows up with discussing other meanings of the words briefly after providing definitions that are relevant to the context. Therefore, students will be aware that there are more than one function.

The post-activity requires and involves students to be active as there will be questions-answer sessions to test their understanding of the vocabulary words that they've learnt in the previous activity. **'Quizlet'** is one of the useful platforms for teachers as they can create digital flashcards by putting the vocabulary words on one side and the definition on the other or questions on one side and answers on the other. In this task, students are required to answer a set of questions consisting of an auto-generated mix of written, multiple choice, and true and false questions based on the vocabulary set and also live match or gravity activity where students will match the words on an interactive whiteboard. This method helps students to practice and master what they've learnt while the teacher will be able to track and view students' scores.



The implementation of digital tools in teaching English helps students with the medium proficiency level to be more interested and connected to the learning process. This interactive and participative method creates a responsive learning environment as students have more chances to explore and exploit the vocabulary words.

2.4 The Silent Method

To summarize this method, The Silent Method was developed by Caleb Gattegno and is based on the premise where the teacher remains silent as much as possible throughout the teaching process. By doing so, this encouraged learners to produce as much language as possible without the guidance of the teacher. Similar to Discovery Learning by Jerome Bruner, which encourages learners to learn from past experiences and knowledge, use their instinct, imagination and creativity as well as search for new information to discover facts, correlations and new truth. Both Silent Method and Discovery Learning seek similar results where learners do not equal absorbing what was said or read rather than actively searching for solutions and answers.

The Silent Method was used as a vocabulary teaching method on improving students; vocabulary learning in the online class. The reason for choosing the Silent Method rather than the Discovery Learning is that in Discovery Learning, at a certain proficiency, learners might reject the idea as there is noteworthy knowledge and skills that the learners should need to learn. As Junior 1, their past experiences and knowledge on the language might not be sufficient unlike learners from Junior 2 or 3. Hence the choosing of Silent Method. However, from the specifics, there are a number of strengths, weaknesses, opportunities and threats for using this method of teaching in vocabulary.

2.4.1 Participant and Procedure

The requirement for participants for this research using this method is students from Junior 1 with high English proficiency. Since this method requires the teacher to be as silent as possible or give answers as little as possible, students have to be independent in giving out the answers with minimal to no instructions. Hence, the reason for higher English proficiency students. However, in order to conduct the class using this method, teachers must allow the students to adjust themselves as the sudden change in teaching method might be difficult for them to adjust.

3.0 Result

3.1 Grammar-translation method

According to Cargi (2013), the grammar-translation method emphasized on the mastery of the vocabulary knowledge, not only on the grammatical rules. Translation has a significant role in this teaching method. However, translation was not supported by some educators as they claimed that translation does not help the students to develop their communication skills in the target language. It is undeniable that translation has reduced the students' exposure to the target language; the students do not have the opportunity to involve themselves in the target language all the time. However, in the research done by Tzu-Yi Lee (2013), translation activity helped the students to improve their reading performance and gave the students an opportunity to further understand the text.

In this study, translation made the learning activities meaningful. The students engaged themselves in the pre-reading, while-reading and post-reading activities by responding to the teacher actively. In the pre-reading stage, the students managed to write the meaning of the words and phrases in Chinese language. Next in the while-reading stage, the students were able to read aloud the passage and translated the passage to show their understanding. However, some students with extremely low English proficiency were unable to complete this task. Lastly in the post-reading stage, the vocabulary and comprehension exercises were the assessment tools used to judge students' understanding.

3.1.2 Strengths

Grammar-translation method encourages the low proficiency students to engage in the learning activities. They can learn a lot of new vocabulary within a short period of time as it provides mental convenience to the students.

In this study, there was a high level of student engagement. During the lesson, students were asked to translate the reading passage, and they helped each other when their classmates were unable to translate certain words or sentences. Through the activities, the students were able to make a connection between Chinese language and English language. Obviously, this method helped to promote understanding. When the students were able to understand the reading passage, they could relate the learning content with their real life experience and this situation promoted meaningful learning.

Another strength of the grammar-translation method is time saving. There are a lot of strategies that can be used to teach vocabulary, such as showing pictures, word games, semantic maps, demonstrations and so on. However, these strategies are always not applicable in the

exam-oriented classroom because they are time consuming. In this case, translation makes learning easier as they can learn as much vocabulary as possible by checking out the meaning of the vocabulary through the online dictionary. Moreover, they can communicate with the teacher easily by using Chinese language. This helped to save time.

3.1.3 Weaknesses

Grammar-translation method has been criticised by the educators from time to time as it does not help to develop students' listening and speaking skills. This classic teaching method requires the students to have a good mastery level in the first language (Chinese language).

Firstly, the grammar-translation method has reduced the exposure of the English language in the online classroom. When the students translated the reading passage, no oral activity took place in the English language and this will result in poor pronunciation and weak communication skills. This method does not allow the students to practise listening and speaking skills. As a result, in the post-reading activity of this study, the students explained their answers in Chinese language..

Next, those students who are weak in Chinese and English language were not able to construct the meaning found in the reading passage. This happened when the difficulty level of the reading material did not match with the students' abilities. When the reading passage is too difficult for the students, especially those who are weak in both Chinese and English language, the grammar-translation method is not helpful.

3.1.4 Opportunities

Students' first language (Chinese language) played an important role in clarifying the information found in the reading passage. As mentioned earlier, the grammar-translation method promotes understanding and this results in meaningful learning. Meaningful learning motivates the students to learn and improve their English language. For example, when the students were translating the reading passage, they could understand it and this made the students interested in completing the exercises. On the other hand, demotivation always occurs due to the lack of understanding in the students' learning content. So the grammar-translation method provides the weak students an opportunity to understand the learning content and motivate them to study.

Exercise 4

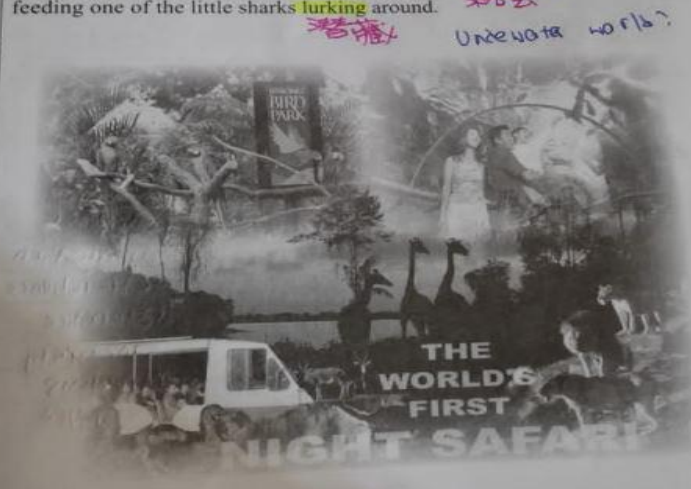
A. Read the following passage carefully.

A Holiday Trip

A holiday is something we students love. Last year, I visited Singapore, an attractive little country in the south eastern part of Asia. It's a country of amazing people and places. It is very easy to reach Singapore as we have flight services from all metro cities to Singapore.

We reached Sentosa Island by cable car that starts from Mount Faber. It is an extra large water park in Singapore. The whole area is worth our admiration. The scene is a real feast for nature-lovers. I was incessantly clicking my camera. The boat ride here is mind-boggling and is one of the world's longest. There are lots of kids' activities, shopping areas and resorts too. Staying in one of these resorts for a day is truly enjoyable!

The underwater world is an enormous aquarium that accommodates large species of marine life. Once you are in there, you won't have the mind to leave it. It's that wonderful. I had the opportunity to see a diver feeding one of the little sharks lurking around.



3.1.5 Threats

Grammar-translation method causes the weak students to rely on dictionaries. It is undeniable that traditional and online dictionaries are helpful in learning languages. By using the grammar-translation method, the dictionary is a useful tool and hence students rely on it for language translation. An over-reliance on dictionaries may cause the students to learn through memorisation. The students memorised the definition of the vocabulary in Chinese language and there is a lack of thinking activity. Learning might not occur without a dictionary. In addition, when it comes to exams, dictionaries will not be provided and this might result in students' poor performance.

3.2 Interactive and Participative Method

Interactive and participative learning is a hands-on approach to helping students become more engaged and retain more material. With or without a form of technology, interactive learning helps students strengthen their vocabulary knowledge. This method has been proven to increase students' performance and help students develop more autonomy.

3.2.1 Strengths

Interactive and participative methods of teaching encourages all levels of students to stay engaged in learning activities, keeps them more interested and helps them to learn the lesson especially vocabulary in fun and interesting ways. One of the advantages for teachers having this method is that it can help them create a class structure that's more engaging and fun, so the students can show what they actually want to learn. It ensures full participation of students in the learning process, and which is a major source of learning. It helps teachers to focus on students' needs, abilities and interests. The use of digital tools help students to practice vocabulary more effectively and in a realistic way. Students will have more potential to enhance and explore new words while participating. Apart from that, each of the students will have an opportunity to express themselves better using appropriate vocabulary with teachers' guidance.

3.2.2 Weaknesses

Although interactive and participative classrooms overwhelmingly benefit students and teachers alike by creating a more cohesive, collaborative environment that empowers students, there are some challenges that come with this learning model. In terms of preparation, there are few challenges for teachers to face in order to conduct an effective and creative lesson. One of them is time management where teachers are required to spend more time in preparing teaching materials as it is very important for them to visualize and convey the content of the lesson clearly to students. In terms of learners learning vocabulary, a handful of students will refuse to participate as they are unable to share their ideas or opinions verbally using the right words. Some students struggle to perform their parts as they're having a lack of adequate vocabulary. They couldn't participate well due to these language complications and students who are good in vocabulary have high chances to be on track and provide full participation in learning.

3.2.3 Opportunities

Utilizing digital tools in teaching vocabulary helps students to have high chances to understand the words that represent the ideas or concept. Knowing more words allows a student to choose their words more precisely and so become more effective and accurate when communicating with others. It empowers students' academically. Followed by, students can develop their mastery of the vocabulary skills and will be more attentive when they're required to provide response towards any lessons using a wide range of vocabulary as they're used to it

and well-trained during conventional lessons. Learning a source of vocabulary through digital tools and practising an active participation enables students to understand one's ideas better and gives students the opportunity to practice and master the usage of a particular word effectively.

3.2.4 Threats

In terms of learning outcome, even though students take a particular period of time to adapt to the new vocabulary words, somehow through the active participation and teachers' guidance they'll be able to learn the use or meaning of each words successfully and also for teachers it enable them to better reach students who are further from the average within their classroom, potentially benefiting students with weaker academic preparation. Both interactive and participative methods and use of digital tools in teaching vocabulary bring benefits to students. At the end of the day, it helps students to learn and make use of those words appropriately and effectively. Other than that, it is a good platform for weaker students to improve their vocabulary in a friendly and fun environment.

3.3 The Silent Method

3.3.1 Strengths

In terms of learners learning vocabulary, learners are more attentive in class as they pay attention to the meaning of the vocabulary from other learners and it encourages learners throughout the class to participate in the process. Throughout the lesson, it is noticeable to see learners coming out with different meanings of the vocabulary without the assistance of the teacher.

- Bat*** - *An animal*
- *An object which is used in playing baseball*

For instance, the word “**bat**” learners will interpret it differently just from the word alone as shown above.

In terms of learners improving their vocabulary, learners will improve in their vocabulary. Their knowledge on vocabulary will be broadened as they learn different meanings from the same word which other learners presented. Previously, a number of learners didn't know that there were other meanings for the same word, however through this learning method students are motivated to learn more vocabulary on their own and to prepare themselves for future classes.

- The tree **bark** is rough to the dog.* - *Bark: sound of a dog makes*
- *Bark: a tough protective outer layer of the tree trunk*

For instance, the word “**bark**”, only a small percentage would understand the sentence as the tree bark as in the tough protective outer layer of a tree trunk while others would ask for reasoning as to how the tree bark as in the tree making the sound of a dog.

In terms of learning outcome, overall learners are able to learn from each other and encourage each other in learning more vocabulary and broadening their knowledge on vocabulary. Using this method allows learners to see how much they know and what they should know. Learners are able to identify their own proficiency and improve on themselves without much guidance.

3.3.2 Weaknesses

In terms of learners learning vocabulary, a small percentage of learners will be discouraged as they are unable to present any answers to the word. These discouraged learners are not bad learners, they are unable to use the language as frequently as others due to Mandarin being their mother tongue and the language they use frequently at home.

These discouraged learners will need to be prompted to answer and if they are unable to answer, they will be even more discouraged as teachers are to remain as silent as possible. Learners will assume that the teachers are looking down on them which is the total opposite and discouraged to use the language even more or resulting in the worst-case scenarios, hating the language.

In term of learning outcome, overall, with some prompting and motivation, learners are still able to learn however they are on the border line on hating or loving the language therefore, other learns from the class should encourage and motivate them and teachers should slowly prompt them into answering instead of immediately asking a lot or start off with simple vocabulary to build confidence in these discouraged learners and eventually they will be motivated enough to learn more and improve on their own.

3.3.3 Opportunity

In terms of learners learning vocabulary, learners are encouraged and motivated to self-learn rather than waiting for the teacher to teach. In today's modern time where a pandemic has stopped many students physically from going to school and learning from conventional classes and has moved to online learning, self-learning can play a major role for learners to learn better and expand their knowledge wider not only for language but for many other subjects taken by the students.

- You look **friendly**.
- You look **amiable**
- You look **warm**.
- You look **cordial**.

For instance, the use of different vocabulary in essay writing is noticeable. Rather than using simple vocabulary, once learners engage in self-learning as they are motivated and encouraged, they will use different and much more difficult vocabulary in their writing as shown

above. As a substitute to the word “friendly”, learners will use “amiable”, “warm” and “cordial” which has similar meaning.

In terms of learners improving their vocabulary, as mentioned previously, learners will improve on their vocabulary however a slight prompting of learners might be needed in the beginning but once learners are used to the method, learners will be engaged in the process where they will answer and question each other for the meaning of the vocabulary. Learners will not only improve their vocabulary but their reasoning skills for speaking as they discuss with one another the true meaning of the word.

*The tree **bark** is rough to the dog. - Bark: sound of a dog makes*
- Bark: a tough protective outer layer of the tree trunk

Using the similar example, in the beginning of using this method learners will just accept the answer to the word “bark” as in the sound a dog makes. However, in time learners will understand that there are multiple meanings to some words and they will discuss among themselves to find the true meaning of the sentence.

In terms of learning outcome, learners with higher English proficiency will definitely improve by a great margin. From this method, higher English proficiency learners will prepare themselves before classes and reduce the time taken for teachers to explain the vocabulary. Using this method will also link into improving other skills in English like writing and speaking.

3.3.4 Threat

In the early stage, the obvious threat is encouraging the learners to answer without the assistance of the teacher. Learners in the beginning will feel stressed and nervous as they are afraid they will be scolded if their answer is wrong. Teacher must start off slowly, start off by explaining some vocabulary and reducing the number of times the teacher would explain. For instance, in January, teacher would explain the vocabulary without asking the learners, in February, teacher would still explain the vocabulary however teacher will also start to ask learner to explain with some assist, in March, teacher will reduce the number of times explain and allowing more learners to explain the vocabulary and by April, teacher should not explain anymore and fully giving freedom for learners to explain on their own based on the content given. By doing so, this will allow learners to adapt to the method without a sudden change in their learning environment.

In terms of learning vocabulary, weaker learners might be discouraged as they assume that they are the worst in the class. They might assume learners with better proficiency are mocking them resulting in them lowering their self-esteem in answering questions in the future. Weaker learners might feel a tremendous amount of stress as they feel like they should know a sufficient amount of knowledge on vocabulary but they don't. Resulting in them thinking that they are not good enough at that level as well as feeling hatred towards English as it is too difficult for them.

In terms of learning outcome, due to the method requiring students to have a certain level of English proficiency and sufficient knowledge on vocabulary, weaker learners might be discouraged and even hate the language at the end of the day. Therefore, teachers might be required to spend a large amount of time preparing materials for weaker learners to improve and encouraging them to answer with as minimal as possible prompting.

4.0 Conclusion

In conclusion, the Interactive and Participative Method would be the recommended method for all levels of English proficiency. Students with low English proficiency wouldn't be stressed as the method allows students to interact with the lesson using pictures, PowerPoint slides and books. Hence making low proficiency students able to cope with the lesson without feeling demotivated or threatened unlike the Silent Method where students are independent in learning and finding the answers themselves. Using Interactive and Participative Method also allow better communication between students and teachers, where students are participative in the learning process and question and answering process. Unlike the Grammar-translation method where students might depend on the teacher in giving the answers and the method leans towards the teacher giving out the answer more than asking the students to participate as well as the Silent Method where the teacher wouldn't be able to assist or help weaker students in the question and answering process.

Reference

- Zhang, L., & Annual, S.B. (2008). The Role of Vocabulary in Reading Comprehension: The Case of Secondary School Students Learning English in Singapore. doi:10.1177/0033688208091140
- Mart, C. T. (2013). The Grammar-Translation Method and the Use of Translation to Facilitate Learning in ESL Classes. *Journal of Advances in English Language Teaching, 1(4)*, 103-105.
- Lee, T. Y. (2013) Incorporating Translation into the Language Classroom and its Potential Impacts upon L2 Learners. Cambridge Scholars Publishing.
https://www.researchgate.net/publication/309429361_Translation_in_Language_Teaching_and_Assessment