Investigating Civil Engineering Students' Vocabulary Learning Strategies at Ambon State Polytechnic
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1. INTRODUCTION
Vocabulary is an essential component of language proficiency which provides the necessary foundations for learners' performance in all four language skills of Speaking, Reading, Listening, and Writing (Alqahtani, 2015). It means the more vocabulary learners have, the easier they can access new information whether in written or oral form. Although vocabulary is a crucial element in language learning and communication, learning vocabulary is not an easy job. Learning new vocabulary is a complex process involving many sub-processes and tasks that require a great deal of preparation to be internalized (Afghari & Khayatan, 2017). In addition to this, Khatimah (2018) indicated that students often encounter obstacles when learning English vocabulary and do not know which method can be used to increase their English vocabulary size. To cope with the difficulties of learning vocabulary, students are suggested to make use of vocabulary
learning strategies.

According to Puagsang (2018) vocabulary learning strategies (VLSs) are defined as a set of actions, behaviors, techniques that learners use to help them find out the meaning of new or unknown words, to retain those words, and to use them in oral or written communication. Amiryousefi (2015) found that vocabulary learning strategies help learners to become more self-directed, regulated, and autonomous while they allow learners to discover and consolidate the meaning of new words more efficiently. Schmitt (1997) have proposed vocabulary learning strategies taxonomy which divided vocabulary into five sub-categories: determination strategies, social discovery strategies, social consolidation strategies, memory strategies, cognitive strategies, and metacognitive strategies.

In his recent study, Ta'amneh (2021) suggested that analyzing the vocabulary learning strategies use by students is needed to identify the effectiveness of these strategies in such learning. This means that identifying students’ vocabulary learning strategies selection and usage is very important not only to reveal information about students' vocabulary learning habits but also to determine the most appropriate vocabulary learning strategies to enrich their vocabulary. Considering all these points, choosing suitable vocabulary learning strategies may help learners to enhance the process of learning vocabulary and/or offer solutions to their vocabulary learning problems.

Alqarni (2018) conducted his study on 81 first-semester male students in the Department of English and Translation at King Saud University to explore the vocabulary learning strategies employed by the students. The results showed that the metacognitive strategy was the most preferred strategy among the respondents. Alqarni attributed this finding to students being relatively inexperienced at the beginning of their program, and not being aware of the learning process, which motivated them to predominantly rely on themselves. The memory strategy was the least used among the students since they avoided the rote learning methodology used in high school.

Related to students’ vocabulary learning strategies, the researcher had conducted a prior study related to students’ vocabulary learning at Civil Engineering Study Program at Ambon State Polytechnic. It was found that some civil engineering students have limited vocabulary which is derived from their lack of vocabulary learning strategies use. It was also found that students were unsure or confused to find the most suitable strategies to increase their English vocabulary. Therefore, understanding students’ various strategies in learning vocabulary can actually help students to increase their vocabulary and overcome their areas of weakness in learning vocabulary. Furthermore, the lecturer should be aware of students' vocabulary learning strategies in order to find an appropriate way to teach the students.

The following research questions underpinned this study:

1. What are the civil engineering students’ Vocabulary Learning Strategies?
2. What vocabulary learning strategies are mostly used by civil engineering students?
2. LITERATURE REVIEW

2.1. Definition of Vocabulary Learning Strategies

Vocabulary learning strategies are considered to be a sub-category of language learning strategies (LLS). Various researchers have proposed several definitions of vocabulary learning strategies based on their respective views. For example, Ruutmets (2005) definition of VLS as constitute knowledge about what learners do to find out the meaning of new words, retain them in long-term memory, recall them when needed in comprehension and use them in language production. On the other hand, Takač (2008) describes vocabulary learning strategies as the activities, behaviors, steps, or techniques used by learners (often deliberately) to facilitate vocabulary learning. Vocabulary learning strategies can help learners to discover lexical items (both their meanings and forms), and to internalize, store, retrieve, and actively use these in language production. Meanwhile, Tılfarlıoğlu & Bozgeyik (2012) define it as the actions which are taken by language learners in order to foster vocabulary learning in the target language.

Based on these definitions, vocabulary learning strategies can be defined as the study habits of students in foreign language vocabulary. Vocabulary learning strategies may help both in discovering the meaning of, and conceptualizing, a new word when learners encounter the word. In other words, vocabulary learning strategy can be defined as applications of students in the process of learning a new word or conceptualizing the previously learned words.

2.2. Schmitt Taxonomy of Vocabulary Language Strategy

Schmitt originally employed Vocabulary Learning Strategies (VLSs) in a study on EFL learners' vocabulary learning strategies in 1997. It's used to see what vocabulary-learning tactics EFL students employed and thought were effective. Schmitt created a vocabulary acquisition strategy categorization based on Oxford's (1990) language learning strategy taxonomy. He explains why he chose Oxford's LLS taxonomies as a basis, arguing that it is one of the more well-established systems and that Oxford (1990) was the best at capturing and organizing the broad variety of vocabulary learning processes.

Schmitt's (1997) Vocabulary Learning Strategies measures five categories, namely: Determination strategies refer to individual learning strategies which help learners in determining the meaning of unfamiliar words without the assistance of others. Social Discovery Strategies refer to the process of acquiring new vocabulary items through interaction interpersonally. Social Consolidation Strategies refer to accepting the help of others in order to learn new vocabulary. Memory strategies refer to variety of strategies that students use to recite vocabulary. Cognitive Strategies refer to mechanical strategies of learning vocabulary. Metacognitive strategies refer to strategies that encompass monitoring, decision-making, and assessing the progress of vocabulary learning. To be more precise, Schmitt’s taxonomy classifies vocabulary learning strategies as in the figure below:
3. METHODS
This research used descriptive quantitative design and employed survey design. This design is aimed to find out which vocabulary learning strategies that were most and least used by civil engineering students. The study was conducted at Ambon State Polytechnics, involving 83 4th semester students of D3 Civil Engineering Study Program. The 40-items questionnaire from Schmitt (1997) was employed in this study. Questionnaires were analyzed by using Descriptive Statistic by SPSS ver. 25.

4. FINDINGS AND DISCUSSION
4.1. Findings
The descriptive statistics of overall vocabulary learning strategies used by civil engineering students are depicted in the following figure.

![Overall Vocabulary Learning Strategies Used by Civil Engineering Students](figure)

**Figure 4.1.1 Overall Vocabulary Learning Strategies Used by Civil Engineering Students**

As depicted in Table 1, the descriptive results showed that determination strategies (M=3.32) are the most frequently employed strategies among the other five categories,
followed by metacognitive strategies (M=3.05), memory strategies (M=2.87), social discovery strategies (M=2.78), cognitive strategies (M=2.56), and last strategies use were social consolidation strategies (M=1.82).

Based on Figure 4.1.2, it shows that the most used strategy is item No. 7 “I use to find the meaning of new words” (M=4.98) and item No.8 “I use Indonesia-English dictionary to find the meaning of new words” (M=4.98). Meanwhile, the least strategy used is item No.5: “I use flash cards to find the meanings of new words” (M=1.40).

Based on Figure 4.1.3, it shows that the most used strategy is item No. 4: “I ask classmates for the meaning of new words” (M=4.11). Meanwhile, the least used strategy is item No.2: “I ask the lecturer for a sentence including the new word” (M=1.69).

Based on Figure 4.1.4, it shows that the most used strategy is item No. 1: “I use to find the meaning of new words” (M=2.73) and item No.2: “I use to find the meaning of new words” (M=1.40).
Figure 4.1.4 shows that among all the social consolidation strategies, the most used strategy is item No.2 “I study and practice the meaning of new word in a group” (M=4.11) and the least used strategy is item No.3: “I interact with native speakers to find new word” (M=1.69).

Figure 4.1.5 Descriptive analysis of memory strategies

Based on Figure 4.1.5, it showed that among all memory strategies, the most used strategy is item No. 9: “I remember words by underlining the words” (M=4.49). On the contrary, item No. 8: “I stick the word and its meaning in the place where it can be obviously seen” (M=1.57) is the least used strategy.

Figure 4.1.6 Descriptive analysis of cognitive strategies

Based on Figure 4.1.6, it showed that among all the cognitive strategies, the most used strategy is item No. 5: “I take notes of newly learned words in class” (M=4.49). Meanwhile, item No.4: “I listen to a tape of word list” (M=1.29) is the least strategy used.
Figure 4.1.6, it showed that among all the metacognitive strategies, the most used strategy are item No. 1 “I listen to and watch English media for example movies, songs, etc.” (M=4.25). On the contrary, item No.5: “I play vocabulary games” (M=1.20) is least strategy used.

4.2. Discussion
The findings revealed that of the five categories, the determination strategies (M=3.32) were the most frequently used by the students followed by metacognitive strategy (M=3.05), memory strategy (M=2.87), social strategies discovery (M=2.78), and cognitive strategy (M=2.56) respectively. Meanwhile, the least use strategies were social strategies consolidation (M=1.82).

As far as determination strategies are concerned, the students mostly choose item number No. 7 “I use to find the meaning of new words” (M=4.98) and item No.8 “I use Indonesia-English dictionary to find the meaning of new words” (M=4.98). The findings of the study are similar to those of Puagsang and Intharaks’s (2017), Sihotang’s (2017), and Damari’s (2019) study. It revealed that using a bilingual dictionary (Indonesia-English or English-Indonesia), which belongs to the determination strategies, proved to be the most preferred overall vocabulary learning strategies. It was found that students preferred to use a bilingual dictionary because it is practical and convenient to use. Furthermore, with the development of electronic dictionaries nowadays, students preferred to search the meaning of new English vocabulary through dictionary applications or Google translate from their smartphones.

As for metacognitive strategies, the students mostly choose item number No. 1 “I listen to and watch English media for example movies, songs, etc.” (M=4.25). The results are similar with those of the study conducted by Bunmak (2021). The researcher examined how much vocabulary students can gain, how their retention can be improved, and their attitudes through employing multimedia (movies, songs) among Thai university students. This study found that using multimedia can improve students’ vocabulary knowledge and retention. It also catches the learners’ interest and can
increase their motivation to learn because it decreases their anxiety and tension in language learning.

In memory strategies, the most used strategy is item No. 9: “I remember words by underlining the words” (M=4.49). This finding related with the research findings by Hasanabadi, et al (2016) about the impact of highlighting techniques on the retention of unfamiliar words; they found several beneficial effects of highlighting or underlining unknown words, such as increased attention and conscious awareness of the link between form and meaning and increased ability to retain unknown words. This suggests that underlining strategy might help students to memorize vocabulary.

As far as social discovery strategies are concerned, the students mostly choose item No. 4: “I ask classmates for the meaning of new words” (M=4.11). The result is in line with the research findings of Ismayanti’s (2016) and Abdullah and Ismail’s (2020) study which explored a variety of vocabulary learning strategies employed by non-English major undergraduate students. Both of their studies revealed that in social discovery categories, non-English major undergraduate students preferred to "ask classmates for the meaning of new words" strategy the most. A possible explanation about why this strategy has been preferred among non-English major undergraduate students is because of its strength in obtaining direct access to the meaning of the word.

In cognitive strategies, the students mostly choose item No. 5: “I take notes of newly learned words in class” (M=4.49). The findings were similar to the previous research by Jin and Webb’s (2021) study about the effects of note taking on vocabulary learning. Their study found that writing words in notes contributed to significant vocabulary learning. Through note-taking it can increase learners’ attention to unknown words they encountered in reading or in speech. It can also make it easier for students to improve the amount of vocabulary they have.

As for social consolidation strategies, the students mostly choose item No.2 “I study and practice the meaning of new word in a group” (M=4.11). The findings are in line with research conducted by Suharmin et al. (2016), and Nugroho (2017) on vocabulary learning strategies employed by EFL learners. “Study and practice meaning in a group” was the most practiced strategy among the learners due to the fact that working in groups help the students to figure out the meanings of words faster than working independently. This finding confirms the theory of Schmitt and Schmitt (1995, as cited in Ismayanti, 2016) which postulates that learners who have opportunities to share vocabulary knowledge with other people can learn and remember the meaning of new vocabulary more effectively than learners who study vocabulary individually.

5. CONCLUSION
The aim of this study was to find what Vocabulary Learning strategies were used by civil engineering students at Ambon State Polytechnic. It is obvious that the students of civil engineering study program at Ambon State Polytechnic used all of vocabulary learning strategies based on Schmitt Taxonomy. Determination strategies (M=3.32) was the most frequently used strategy, especially by “Looking up a word in English – Indonesian/Indonesian-English dictionary” activities. Then, Metacognitive strategies
was the second preferences of the students (M=3.05) through “listen to and watch English media such as movies, songs” activities, followed by memory strategies (M=2.87) through “remembering words by underlining the words”. The next strategy was social strategies discovery (M=2.78) through “asking classmates for the meaning of new words”, followed by cognitive strategy (M=2.56) by “taking notes of newly learned words in class. The least frequently used vocabulary strategy was social strategies (M=1.82), especially through “studying and practicing the meaning of new word in a group” activities. Nonetheless, all strategies are required to assist students in learning vocabulary. When they are aware of these strategies, they will be more motivated to learn and participate more actively in the vocabulary learning process.

References