An Investigation of Vocabulary Learning Strategies Use of 40 Nursing Successful Indonesian Students

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Abstract

Researches indicated that the confusion in selecting the effective instructions and approaches for teaching vocabulary made this latter problematic for teachers especially in the field of English for specific purposes (ESP). The learners of ESP need an adequate vocabulary to read special texts concerning their area of specialism. As a reflection to this matter, recent studies showed that Vocabulary learning strategies (VLSs) are crucial tools for supporting the learners' autonomy and facilitating the vocabulary learning. Therefore, the current pure qualitative case study aims at investigating the vocabulary learning strategies employed by 40 nursing Indonesian students as a case that needs exploration to provide deep insights concerning the use of VLSs in ESP field. Data have been collected through triangulating focus group interviews, observation, and a reading task to gain a thick overview of the way VLSs are used by the participants. Findings showed that the ESP students used different varieties of VLSs including the metacognitive and cognitive strategies, while they showed many lacks in terms of effective use of the mentioned strategies. Therefore, ESP field still need more investigations and researches that shed the light on the way VLSs can be employed effectively to learn ESP vocabulary.

Keywords: Second language acquisition, vocabulary knowledge, language learning strategies, vocabulary learning strategies (VLSs), English for specific purposes (ESP) teaching and learning.

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Introduction

The paramount importance of vocabulary in enhancing the language development is the reason behind the devoting attention given to this field in the last two decades. Many studies such as Maximo (2000), Read (2000), Gu (2003), and Nation (2011) have proved that vocabulary acquisition is crucial for using the language effectively and understanding the spoken and written texts Vocabulary as one of the language micro skills impacts significantly the language mastery of the learners. Schmitt (2000) describes the "lexical knowledge" as the center of communicative competence and second language acquisition. The more the language is used for communication the more the vocabulary knowledge increases. Nation (2001) states that language use and vocabulary complete each other in a converse way. Second language learners need to use the vocabulary not only in the classroom, but outside it as well. An adequate vocabulary enables learners to communicate and use the target language effectively. Nation (2001) emphasizes the importance of vocabulary for the language four skills development. An adequate vocabulary facilitates learners to use the language forms and structures appropriately for communication. Huckin (1995) argues that vocabulary is crucial for comprehending the reading materials. In addition, producing comprehensive and accurate discourses requires varieties of words with the ability of selecting the most appropriate for the context.

Vocabulary has been divided by some experts such as (Hornby (1995), Neuman & Dwyer (2009) into active and passive vocabulary. The first means all the words the learners have studied and are aware of, while the second is all the words they can meet through their learning process but they cannot pronounce accurately. Haycraft (1995) divided vocabulary differently, he claims that vocabulary consists of two types, receptive and productive. The receptive is all the words learners can recognize in a reading text, but they cannot produce and use it in a spoken or written context. Meanwhile, productive vocabulary is the words that learners can easily understand and use when producing written and spoken discourse.

The lack of vocabulary knowledge is perceived as one of the obstacles encountered by the learners. However, it can be due to the flexibility of vocabulary that makes it different from the other skills. In other words, learners cannot rely on clear and specific rules to learn vocabulary. Beside its nature, the size of vocabulary knowledge has its contribution in this matter, one word can have more than two or three meanings. Oxford (1990) argues that the thousands of different meanings made vocabulary considered as the most sizeable and unmanageable component in learning any language including the native language. Therefore, many ESL and EFL learners perceive vocabulary as the main obstacle in the language learning, thus, they spend long time memorizing lists of words and studying the vocabulary items in isolation of the context. This matter leads to the need of emphasizing the vocabulary learning strategies (VLS) in the classroom. Training students to use VLS appropriately is one of the best solutions for the issue of vocabulary learning difficulties.

English for specific purposes (ESP) becomes one of the urgent demands of this era. An adequate mastery of ESP facilitates professionals to communicate effectively in their field. The lack of vocabulary knowledge is considered as one of the potential constraints of ESP learning. Unfortunately, ESP vocabulary field has been given less attention than syntax and language structures. Although the neglect of ESL vocabulary, some researchers such as Robinson (1991) defended the learning of lexical items according to semantic systems. Other researches focused on the relationship between vocabulary knowledge and reading skill.

The lack of an adequate awareness of vocabulary learning strategies resulted negatively on the vocabulary acquisition process, despite all the efforts made by learners to master it. Noles and Dole (2004) emphasizes the potential value of teaching vocabulary learning strategies (VLS) in the classroom, he argues that VLSs are effective tools for constructing the meaning from a text and stimulating the reading comprehension. Therefore, shedding the light on the relationship between VLSs and ESP teaching and learning will provide deep insights for researches and scholars in order to cope with the above-mentioned issue. The current paper is a non- researcher paper that mainly aims at providing the field of vocabulary teaching and learning with a thick overview concerning the relationship between VLSs and ESP.

Literature Review

Definitions of words/word families/morphemes/lemmas and lexemes:

Due to the vital role that vocabulary plays in facilitating learners to master the other language skills, it has been given a big attention by experts around the world. Many definitions have been given to vocabulary based on the way every expert perceives it, based on Procter (1996:1628–678) the word vocabulary means "all the words used by a particular person or all the words which exist in a particular language or subject" meaning that vocabulary has its relation to the person using it and the language itself. Another definition provided by Diamond & Gutlohn (2006) defined vocabulary as the awareness of words and their meanings, he emphasized the potential role of vocabulary as the basic knowledge needed for mastering any other language skill. A more detailed definition given by Henriksen (1996) who sheds the light on the aspects operationalizing the vocabulary comprehension including, the ability to translate the meaning of words from the foreign language into the native language (L1), finding the right definition in a multiple-choice task, or being able to paraphrase contexts from the foreign language into L1. Meaning that possessing an adequate vocabulary knowledge requires learners to be able to transfer the meanings of words from the target language to their native language, the more accurate the transfer is the more mastered the vocabulary knowledge will be. Another aspect to be fully considered in learning vocabulary is the ability to put words in appropriate contexts in a flexible way. Nation (2001) defined vocabulary in a more complex way by focusing on the spoken form of the word, he argues that the learner is considered as fully aware of the meaning of the word when he can recognize and understand it out of its context without the need to guess.

McCarthy (1990, p. 3) provides a clarification about words saying: "it is most convenient to think of words as freestanding items that have meaning" freestanding items are the central parts of a word that can stand by themselves without the need to be bound to any other item. As an example the word "flying", if it is broken into two parts, the part "fly" is a freestanding morpheme because it is meaningful without being bound to any other part. Meanwhile, the part "ing" has no meaning if not bound to another noun (McCarthy, 1990). The freestanding morpheme is called root and based on it many other words can be created if it bounded to different suffixes and affixes, such as "flying", "flied", "flier". The process of adding "er" to "fly" to have the word "flier" is called derivation because the word is derived from the root "fly" while the process of inflecting the word for a grammatical meaning such as when adding '- ing' is called inflection, "flying" is a present participle that indicates the progressing tense, so it reflects a grammatical aspect. Aitchison (2003) & Field (2005) as cited in Easterbrook (2013: 12) defined 'lemmas' and 'lexemes' as the following, a lemma is a word's generalised or glossed meaning and its word class — for instance, noun, verb and adjective whereas a 'lexeme' is a word's morphology and form. According to Nunan (2003) and Schmitt (2010) the category of lexemes incudes the multiword units, as it is mentioned in the example given in Schmitt (2010: 23) 'absolutely fantastic', 'at once!', 'in a minute', 'portable TV', 'the United States of America'. The mentioned words are included in the discussion word families.

To sum up, all the definitions above agree that vocabulary knowledge implies the knowledge of the words' meanings, but it is necessary to not limit it at that extent. Meaning that the vocabulary mastery is the ability to use words in different contexts and relate their meanings with their forms and uses. In addition, the natural linking between the already known words and the newly acquired ones is a significant sign showing that the learner possess a good level of vocabulary mastery. Therefore, it is not enough to consider the knowledge of meanings as an adequate aspect defining vocabulary knowledge, the awareness of all the aspects about a word including its use in different contexts is the real features of a good vocabulary knowledge.

What is involved in knowing a word?

Procter (1996: 1628–678) states that the word vocabulary means "all the words used by a particular person or all the words which exist in a particular language or subject". He described the word as "small unit of the language" that needs to be well understood in terms of its meaning, form, and use. Therefore, it is crucial to know what is involved in knowing a word in order to go deeper with vocabulary comprehension and learning. It is undeniable that words are not isolated parts of the

language, they surely fit into interlocking systems and contexts. It is vital to know what the knowledge of a word should cover and what is involved in knowing a word. Nation (2001) named the efforts learners spend to learn a word in English as "word burden", he argues that words have different burdens based on the patterns and the knowledge they imply in relation to the learners' previous knowledge. As an example, the words holding similar sounds or letters from L1 words will be easier to be learned by the learners than the words that have no relation to the previously gained knowledge. Nation (2001) describes the word learning as a cumulative process that needs learners to meet the word for many times to have it stored in their memory and can use it appropriately depending on the context. Before going further with what is involved in knowing a word, the first thing learners should know is the distinction between vocabulary used in receptive skills and that one used in productive skills.

Nation (2001: 41) summarises all the aspects that should be considered when knowing a word, because the real knowledge of a word should cover its form, meaning, and use. When mentioning any language skill, the receptive and productive aspects of that skill should be considered. The same thing is applied for vocabulary as one of the language skill. The first aspect mentioned in the table is the form of the word including its spoken, written, and word parts. The second thing that should be known by learners is the meaning of the word including its relationship with the form, in addition, the meaning is included in the concept and the items that the concept refers to should be well known by learners to relate the word with its form. The last aspect included in the knowing the meaning of a word is the associations in relation to the word, the metacognitive strategy most important strategies used for such function. The use of a word in relation to the context is the last aspect that is included in knowing a word, it covers grammatical functions, collocations, and constraints on use (register, frequency ...).

Receptive and Productive Vocabulary

A clear distinction between receptive and productive vocabulary should be acknowledged by the learners. Nation (2001) describes receptive vocabulary as the vocabulary used in both listening and reading skills, it can be met when reading a text or listening to people talking in English. The listening vocabulary use is based on the recognizing the form of the word when listening to someone talking and retrieving the meaning. Meanwhile, reading vocabulary use happens when reading a text and retrieving its meaning. what differentiates listening and reading vocabulary use are the strategies used in the retrieving process, but they are put under one category as receptive vocabulary. Productive vocabulary use happens using the form of words to express ideas and meanings through speaking and writing. The productive vocabulary use is more challenging than the receptive because it requires the learners to use the word appropriately in new contexts (Nation, 2001: 43).

High-frequency words

Nation (2002: 12) claims that high-frequency words include many content words: government, forests, production, adoption, represent, boundary. She added that almost 80% of the running words in the text are high-frequency words. The high frequency words are the words that can be frequently encountered by the learners when learning ESL and EFL or even incidently in their daily life. High frequency words are easier to be learned than the academic or less frequency words due to the intensive exposure to them.

Academic Words

Academic words are the words used in the academic diciplines and in academic texts. Nation (2002: 13) gives some examples of academic words such as policy, phase, adjusted, sustained, etc. Nation states that the best list of academic words is the Academic Word List (Coxhead, 1998).

Technical Words

Technical words are the words closely related to a discipline or a field of specialization. Nation (2002) gives an example of technical words as indigenous, regener- ation, podocarp, beech, rimu. He claimed that technical words usually cover 5% of texts, but it can be more depending on the extent to

which the text is specialized to a certain field. Technical words are usually common in one topic area but elsewhere. As soon as we see them we know what topic is being dealt with (Nation. 2002).

Low Frequency Words

Low frequency words are the less occurring words in texts, they are rarely met by the learners especially in their learning. Nation (2002: 13) gives some examples of them such as zoned, pioneering, perpetuity, aired and pastoral. He claimed that There are thousands of them in the language, and they take the biggest part of the words in a language. They are all the words besides high-frequency words, academic words and technical words for a particular subject.

Importance of Vocabulary Knowledge in Language Skill Development

Possessing an adequate vocabulary knowledge is the right path leading to the mastery of the other skills' mastery. Schmitt (2000) states that mastering vocabulary of a language leads learners to communicate easily and fluently. Researchers such as Laufer and Nation (1999), Maximo (2000), Read (2000), Gu (2003), Nation (2001) and others summed up in their researches that mastering vocabulary is the key to possess a good spoken and written English. Without vocabulary, learners cannot understand the spoken and written English what result on not producing good and accurate utterances and texts. In addition, vocabulary plays a vital role in learning grammar as well because it facilitates the learners to use the structures and functions of the language easily (Alqahtani, 2015: 3). The more words the learners know the more they can learn and acquire in relation to the target language. Reading as one of the language skills that requires learners to possess an adequate vocabulary knowledge to understand the texts and deal with the different types of written discourses. Having troubles in producing grammatically accurate and correct sentences will not restrict learners to express themselves and produce comprehensive utterances. Willis (1981) states that vocabulary knowledge to language comprehension and use is like the heart to the body, possessing an adequate vocabulary knowledge motivates students to talk more and make them more confident with their English, what will open the opportunities for them to practice more and improve their grammar as well. Nation (2001) argues that 97% of the vocabulary used in a text should be understood by the readers in order to fully understand the text. Being aware of the key vocabularies meanings of a text is the essential to understand the message from that text. Therefore, vocabulary is considered as the most crucial and needed skill to master any language.

Process of Vocabulary Acquisition

Information Processing Theory of Vocabulary Acquisition

Blakemore and Frith (2005) believe that the process of life-long vocabulary learning starts from the early age of humans by matching words meanings to objects, the rate of vocabulary acquisition increases dramatically by the time a child grows older. 2000 words vocabulary of native language is the approximate average number of acquired words by five-years-old children. Adults also learn vocabulary at a fast rate. Therefore, it is crucial to emphasize the process vocabulary is acquired and stored in the human brain. The information-processing models were developed by cognitive psychologists in order to explain how the knowledge is acquired by the human brain. This theory mainly discusses the aspects of memory encoding and retrieval, it focuses on how learning emerges in terms of memory and human brain. Mitchell & Myles (2004) state that the experts of information processing theory believe that second language acquisition is a cognitive process that includes the involvement of several steps and components. Learning strategies are one of the procedures made by learners to be involved in this cognitive process. Vocabulary as one of the linguistic competence components follows the same process as the other language skills in the human brain. Michelle and Myles (2004: 24) point out that "the initial initiative in learning a second language is known as the controlled processing, this step involves activating the selection of information nodes in the memory". The mentioned activation is controlled and constrained by the short-term memory. It happens automatically after employing it frequently in different situations. As a result, it does not require attentional control due to its storing in the long-term memory. The information processing theory is one of the most important theories in the psychological field of second language acquisition, it provides an elaboration of the way the information, including vocabulary words, are stored and retained in the human brain.

Steven Krashen's Theory of Second Language Acquisition and Vocabulary Acquisition

Second language acquisition (SLA) is the process of learning any language besides the mother tongue with or without deliberate and conscious instructions, the main focus of many theories and researches is the way this process happens, the behaviorists consider the linguistic environment as the dominant factor causing it to happen. Wang & Yang (2013: 861) state that in the behaviorist perspective, stimulus and feedback are indispensable elements in the acquisition. Steven Krashen systematic and comprehensive theory of SLA that has been revealed by him in the early 80s of the 20th century includes five main hypotheses: a. the Acquisition-Learning hypothesis; b. the Monitor hypothesis; c. the Natural Order hypothesis; d. the Input hypothesis; and e. the Affective Filter hypothesis [2]. The most comprehensive theory of Krashen is the language input theory that perceives language acquisition as a conscious and explicit process based on the acquisition rather than learning. This can be applied for vocabulary teaching and learning as well, the issues mostly encountered by learners when learning vocabulary are related to the determination of new words' meanings, the way how to apply these meanings appropriately in new contexts and express themselves using the accurate and appropriate words, all of these problems are acquisition-related (Wang & Yang, 2013: 2). Therefore, Krashen input hypothesis theory emphasizes the point that acquisition and learning are totally two different things that should be combined when teaching the language skills, including vocabulary. Krashen input hypothesis theory as descried in (Wang & Yang, 2013: 861) perceives the material that can be produced and achieved by the learners in the target language as "input" that includes varieties of written and spoken information received from the environment. Therefore, providing different varieties of comprehensive "input" for vocabulary learning is one of the teachers' responsibilities when teaching vocabulary. This input is in accordance with Krashen's "comprehensible input", which is with the aim of deepening students' (Wang & Yang, 2013: 862).

Types of Vocabulary

The distinction between the vocabulary types is essential for teachers and learners in order to determine which approaches and instructions to use while learning and teaching; In addition, acknowledging the different types of vocabulary facilitates the learners to focus on the type they need for their learning purpose. The recent studies leaded to the distinction between the vocabulary used in written texts and spoken texts. The analysis of the Cambridge International Corpus (CIC) by Gounder (2015) showed that written texts use more specific lexical words than spoken texts. This latter tends to be more general and obscure. Therefore, the focus should be given to the spoken vocabulary in the situations that require active communication; meanwhile, written vocabulary is specialized for the input. If vocabulary should be classified based on the words' frequency, the core and non-core vocabulary are considered as two other types. The core vocabulary refers the words that frequently occur in written and spoken texts. McCarthy (1990) claims that core vocabulary words are preferred to be used by many people due to their awareness of its meaning. the core vocabulary words are mostly used for elaborating and paraphrasing. The non-core vocabulary is common in ESP context, Carter (1988: 172) claims that "non-core vocabulary is the across-specific vocabulary in which the language as a whole is concerned". In terms of ESP teaching and learning, the distinction between technical and semi-technical vocabulary is needed. Dudley-Evans and St John (1998) state that semi structural vocabulary is mainly used in general language, but it has a high frequency occurrence in specific and technical descriptions and discussions, meanwhile, the technical vocabulary has specific and specialized meaning which is used for special disciplines of ESP.

Learning ESP vocabulary

Xhaferi (2010: 232) claims that Vocabulary acquisition is incremental in nature and this means that words are not learned instantaneously but they are learned over a period of time. Meaning that vocabulary is a skill requiring learners to be in an intensive exposure with words to firstly discover their meaning, retrieve, store, and use it appropriately depending on the need. English for specific purposes learners need specialized vocabularies to be used for specific needs depending on their field of specialization. Schmitt (2000, p. 131) argues that "the object of vocabulary learning is to transfer lexical information from short-term memory, where it resides

during the process of manipulating language, to permanent long-term memory". the mentioned transfer to be happen needs an exposure to the needed words in a systematic and effective way, the role of input here plays a crucial role including the input given by the teacher and the efforts spent by the learners to achieve the mentioned exposure, what is called as Vocabulary learning strategies.

The first gate for words when initially encountered by the learners is the working memory or the short- term memory. Xhaferi (2010) defines the working memory as the bridge transferring the information to the long-term memory, with a limited capacity to hold information for a limited time. Meanwhile, the long-term memory holds the information for a long time with an unknown capacity. Words are stored in the long-term memory and represented based on their relationship to one another, what Nation (2002) called as collocations. Driscol (2005) states that concrete words are easier to be learnt than abstract words. It is much easier remembering words as school, girl, boy than remembering words as independence and reputation. Driscol explained that the reason behind such thing to happen is that concrete words are better remembered by two memories, the verbal and imaginal system. While the abstract words are less remembered by the verbal system.

English for specific purposes course as one of the recent trends of higher education aims at preparing the learners for their future career and cope with globalization era requirements. ESP differs from ESL and EFL in many aspects including its vocabulary that is considered as less occurring due to its relation to specific fields, such as medicine, agriculture, education, etc. It is necessary to have the teachers trained and well introduced to such vocabulary in order to provide adequate input for their students. Since the time given in the ESP class is not enough to ensure the adequate exposure to vocabularies, it is essential for the teacher to arise the learners' awareness of learning strategies and their importance in facilitating them learning ESP vocabulary autonomously.

Teaching ESP Vocabulary

The most effective way to teach vocabulary has been a topic of debate for a long time. Some experts such as Dudley-Evans and St John (1998) emphasize the idea of teaching vocabulary through non-direct or incident instruction, they state that ESP vocabulary should be learned by the learners incidently when given exercises and activities. This opinion agreed with the idea of lexical approach that emphasizes the use of words in their contexts to be taught and learnt communicatively. Strevens (1973) as cited by Xhaferi (2010: 234) points out that "learners who know scientific field may have little difficulty with technical words; but a teacher who doesn't may have a great deal". Meaning that learners by being in a direct exposure to the field and its practice can better understand the words used for that field than teachers who only teach ESP without being in a direct touch with the field. Xhaferi (2010) states that lexical chunks are very important in ESP learning because learners tend to use them when communicating and writing. In addition, they are crucial to facilitate learners identify low and high frequency words. Kavaliauskienë and Janulevièienë (2000) believe that retrieving and using chunks in a combined way is the way to achieve fluency and accuracy in the language use. Therefore, it is vital for ESP teachers to emphasizes the importance of chunks and train the students to use them appropriately. Dudley-Evans and St John (1998) claim that ESP is an approach rather than a product and it depends on the learners and their needs in relation to their field of specialization. It is important to point out that technical vocabulary occurrence in texts and different discourses is shaped by the same reasons as the general vocabulary. Dudley-Evans and St John (1998) categorize the ESP vocabulary into general vocabulary with higher frequency or with specific meaning in a particular field. Therefore, ESP teachers should possess the knowledge of both general vocabularies with specific meanings related to the field and general English words with correlation to certain disciplines. The way to teach ESP vocabulary doesn't differ significantly from the ESL and general vocabulary teaching. the only aspect that makes it differ is the nature of words as grammatical vs lexical words, cognates vs non-cognates, etc. (Kavaliauskienë and Janulevièienë, 2000). Xhaferi (2010) claims that ESP vocabulary needs to be taught by focusing on words in their natural context more than grammatical and language structure. Lewis (1993) states that ESP

vocabulary is considered as more difficult and complex than ESL and EFL vocabulary due to the big amount of collocations in it that requires learners to combine them systematically with the challenge of less chances to translate or transfer the meaning from L1.

The use of lexical approach in teaching ESP vocabulary will facilitate the process of teaching and learning it from the context. Lewis (1993) claims that it is the responsibility of teachers to familiarize their students with as many as possible collocations and the way to use them in ESP vocabulary learning. Morgan and Rinvolucri (2004) agree with Nation (2002) in the point that the way new words are learnt is associative rather than mechanic. Teachers are required to play the role of mediators in facilitating learners to know many collocations and use them appropriately. All the above-mentioned aspects concerning ESP vocabulary nature and the way to teach it lead us to the emphasize of vocabulary learning strategies as tools assisting learning it in an effective way.

Language Learning Strategies Classifications

learning strategies used are crucial aspect to identify whether the leaners are autonomous learners or not. The success of learning a foreign language depends significantly on the way students use learning strategies and the varieties of strategies they use. The more strategies a learner knows and can use the more his language skills improve. Thus, it is essential to know the strategies students have in language learning. Many studies have been devoted in the field of learning strategies in order to classify them based on their nature, function, impact and more. Oxford (1990) classified learning strategies based on sources into direct and indirect strategies. Direct learning strategies consist of three main categories, memory, cognitive, and compensation strategies. While indirect learning strategies are metacognitive, affective, and social strategies. O'Malley and Chamot (1990) classified the VLS into three main groups, each group contains three subgroups, the first group is metacognitive strategies that include planning, monitoring and evaluation. The second group is cognitive strategies including many strategies such as repetition and summarizing. The last group is socio-affective group that contains questions for clarification, cooperation, and self-talk. The classifications stated above are the most common in the field of learning strategies, but most of them do not provide a detailed and accurate organization of strategies. In other words, these classifications still not cover all the aspects that should be considered in the field of learning strategies such as psychological, learning and second language acquisition aspects. In addition, the classifications listed above do not explain the relevant importance of each strategy to facilitate teachers and learners being aware of the most effective strategies in each classification.

Definitions of Vocabulary Learning Strategies

Winden (1987) as cited in Kulikova (2015) states that strategies refer to specific actions or techniques implied by learners to acquire and learn the language; meanwhile, Ortega (2009) argues that learning strategies are guided and controlled by the human brain consciously; thus, not all of them are observable. Learning strategies are problem orientated and they may contribute directly or indirectly to learning, they may be consciously deployed or become automatized and remain below consciousness, this proves that they are not mental in nature, but conscious and behavioral. Nevertheless, many of them come from the human brain, but they still influenced by other factors such as the culture, the interests, the motivation, and the like. Another definition given by O'Malley and Chamot (1990, p. 1) describes the vocabulary learning strategies as "the special thoughts or behaviors that individuals use to help them comprehend, learn, or retain new words". Meaning that vocabulary learning strategies function differently based on their type and the situation they are used in. This definition leads to the thought that vocabulary learning strategies should be classified based on many factors, including their use, their nature, and even their effectiveness and appropriateness for a field such as ESL, EFL, or ESP as considered in the current study.

Another definition of vocabulary learning strategies to be emphasized is that one given by Schmitt (1997) since her taxonomy is considered as the most comprehensive and complete taxonomy of VLSs. She based her definition of VLSs on Rubins' early definition who perceives VLSs as the process by which information is obtained, stored, retrieved, and used. Chamot (2012) emphasizes the function of learning strategies as facilitators of the language learning. While Wenden (1991) argues that learning

strategies are shaped by the mental procedure in the human brain, they are used strategically by learners. Therefore, learning strategies are mental steps constructed in the human brain after observing and receiving knowledge (from teacher or environment), they are performed behaviorally and strategically based on many factors including internal and external factors. Each strategy has its appropriate use and function depending on the way learners employ it and when they use it.

All the above mentioned definitions refer to the general definitions of learning strategies to define VLSs. The current research follows the definition given by Schmitt (1997) as its guiding reference since it is the most specific and consistent definition given to VLSs that covers all the aspects in relation to vocabulary learning including, the way the information (words) are obtained, stored, retrieved, and used. Following the mentioned definition logically lead to the employment of Schmitt (1997) taxonomy in the further steps of the current research.

Vocabulary learning strategies taxonomies

The taxonomy developed by Nation (2001) indicates specifically the characteristics that a strategy should possess, including the choice, complexity, knowledge from training, and increase the efficiency of vocabulary training and use. Nation's taxonomy divides VLS into three categories, planning, sources, and process. Nation (2001) claims that repetition is crucial for vocabulary learning, this is due to many aspects that can be known about the word. Thus, one or two times of exposure to the word are not enough to cover all the aspects in relation with it. Retrieval is essential for vocabulary development and storing the words in memory, Nation (2001) emphasizes the usage of retrieval by students instead of rereading their notes. Robinson (1980) states that sources such as dictionaries are used for three main functions, decoding for comprehension, encoding for production and vocabulary intentional learning. Recording with its different types is one of the noticing forms. Noticing emerges when learners recognize and consider a word as important for their learning. Word cards and vocabulary notebooks are the most effective and commonly used forms of recording.

Schmitt's (1997) Vocabulary Learning Strategy Taxonomy

Schmitt taxonomy is the most complete and comprehensive taxonomy of VLSs. It has been based on Oxford's (1990) Strategy Inventory of Language Learning (SILL). The taxonomy includes fifty-nine strategies that have been categorized into groups based on their source and function into five categories (Determination, Social, Memory, Cognitive & Metacognitive strategies) as illustrated in the figure 1 below taken from Wong (2014:18).

The Research Methodology

The current study is a qualitative inductive case study employing qualitative method in collecting data. Creswell (2005) believes that a case study is a qualitative research that focuses on providing an in depth understanding about a problem. This research method is selected for this study based on the following reasons: (1) to conduct an in-depth study about vocabulary learning strategies used by ESP students in particular while acquiring and learning new vocabulary, (2) to provide a thick and deep insights concerning the use of VLSs in the ESP field, (3) the ESP students will be studied as a case which needs investigation. The current research has been preceded by a preliminary research. The preliminary research aims to provide a better awareness about the field of the study and the research problem, especially the participants' level of vocabulary knowledge, (4) to conduct an in-depth study about vocabulary learning strategies used by ESP students in particular while acquiring and learning new vocabulary, (5) to investigate how learning strategies, contribute in stimulating the learning process

Sampling and Participants

The participants of this study are 40 students of the fifth semester of nursing program in Medical faculty of Aisyah University, Yogayakarta. Indonesia. The researcher selected the mentioned faculty to be the context of her research since it is considered as a field of ESP, the students there take English classes from the first semester until the last one. The convenience sampling has been employed when selecting the mentioned faculty. Convenience sampling is a type of nonprobability and nonrandom sampling where members of the target population that meet certain practical criteria, such as easy

accessibility, geographical proximity, availability at a given time, and the like. (Etikan, Musa, and Alkasim, 2015). Therefore, the nursing faculty of Aisyah University was selected as one of the ESP Indonesian contexts that still need exploration in terms of VLSs employed by its students.

After conducting the preliminary research, only 40 students of 250 have been be selected purposefully for the qualitative data collection. Creswell (2005:203) claims that in qualitative inquiry, the intent is not to generalize to a population of a central phenomenon, but it is to conduct an in-depth study concerning the problem. Therefore, the sampling method that has be used in this qualitative research is the purposeful sampling. In this sampling method, the participants have been selected based on the benefit they can provide to the research. Participants who have been selected are the most helpful ones with a noticeable relation to the problem. Thus, they can promote the study with depth insights concerning the phenomenon. In the case of this current study 40 ESP learners have been selected based on their value to the study as ESP learners. In qualitative research the sample size is mostly not big, due to the focus of the research that is centered on providing an in depth understanding of the topic or phenomenon. Creswell (2005:207) argues that "it is typical in qualitative research to study a few individuals or a few cases, this is because the overall ability of a researcher to provide an in depth picture diminishes with the addition of each new individual or site", thus, the researcher selected only 40 students from a big population of 250 students.

Data Collection Instrument

Miles and Hubberman (1995) claim that many qualitative researches involve single cases, with few individuals. Who need questionnaires, observation schedules, or tests. Therefore, the present study used three data collection instruments, focus group interviews, observation, and reading tasks.

The Focus Group Interviews

Focus group interviews are using a semi structured group session, moderated by a group leader, held in an informal setting. In the purpose of collecting information on a designed topic (Morgan, 1996). Morgan (1996) claims that the focus group interviews are qualitative data collection instruments that are based on interaction as a source of data.

This instrument has been selected for this study to collect qualitative data concerning the thinking process and the rationales of using certain VLSs by 40 ESP learners.

Table 1. An example of focus group interview

What is your name?	What do you like to do to help you retain the newly-learned English vocabulary?
How many hours a week do you study English for communication in the classroom at your university?	especially when in class?
According to question No. 2, do you think it is enough?	What do you like to do to help you retain the meanings of English vocabulary, especially?
As a university student, how is English important in your daily life?	When outside class?
How is English important for your future career?	What do you like to do to expand English vocabulary when in class?
What do you think is very difficult for you in learning English?	What do you like to do to expand your vocabulary, especially when outside class?
What language element do you think is necessary for good listening, speaking, reading, or writing English?	How do you develop a variety of techniques for your vocabulary learning?
What do you like to do to help you discover the meanings of English vocabulary?	Do you have any comments on vocabulary learning in your present classroom?
especially when in class?	
What do you like to do to help you discover the meanings of English vocabulary, especially when outside class?	

The interview adopted from Wong (2014) focused on eliciting data concerning the strategies ESP students use to discover and find the meaning of new words in English. In addition, it shed the light the strategies they use to expend their vocabulary knowledge when in the class and outside of it. The focus group interviews were semi-structured to allow the researcher as much data as possible, such as making the questions more specific by giving some examples of the strategies.

Table 2. The reading task

The nurse tied tightly **a tourniquet** around the upper arm of the patient. She asked the patient if it is painful. Yes. A bit painful, he answered. after taking a blood sample of the patient, the nurse prepared **forceps** and **catheter** for **the surgeons** to start the operation. The medical professional used **stethoscope** to listen to the beating of the heart, and sounds of breathing. Based on the report made by the **oncologist,** the patient suffers of a toumur in his **throat**. It started by difficulty in swallowing that led to **shivering** attacks and an urgent throat surgery is needed.

The reading task above is taken from the learning materials used by the lecturer in the nursing faculty to be used as one of data collection instruments. The participants will be given the task and asked to deduce the meaning of the eight words written in bold. When doing that they should use the think aloud protocol to tell about the thinking process and the intuitions that lead them to choose one strategy to be used.

Think-Aloud Protocols

The researcher adapted the think-alouds to observe the thinking process behind participants' VLS use during the reading vocabulary task performance. ten participants who opted to perform the vocabulary task individually were to think aloud as they tried to deduce the meaning of the eight selected words, while the other thirty worked together in pairs and threes to deduce the meanings of unfamiliar English for specific purposes words. The think-aloud protocols required the learners to articulate their thinking process as they selected strategies to deduce the meaning of the vocabulary item.

Observation

Besides the above-mentioned instruments, the researcher used observation as an additional instrument to observe the learning process of vocabulary in the class. Although many vocabulary learning strategies are considered as non-observable, but the researcher filled that gap by using the reading task to gain more insights concerning the thinking process accompanying the use of the strategies.

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Finding and Discussion

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Participants' Most Difficult English Language Learning Areas

The illustration of the participants' most difficult English language learning areas given in table 3 indicates that reading and Writing were the most difficult areas for more participants than the other language learning areas. According to interview findings since it was semi-structured interview, 23 of the participants told that these two areas are the most challenging for them due the lack of adequate vocabulary knowledge.

Table 3. the participants' most difficult English language learning areas

Vocabulary	Spelling	Writing	Grammar	Listening	Reading	Speaking
15%	5%	30%	5%	10%	20%	15%h

Vocabulary Learning was one of the most difficult ESP language learning area for ten participants they felt that they were unable to understand the message if they did not know the meaning of the word, the participants emphasized English for specific purposes as the most challenging type of vocabulary for them, that is due to its nature as less frequency occurring vocabulary. They expressed their confusion when asked about the element mostly important to improve their English ability.

Table 4. Main Reasons behind ESP writing and reading Difficulties

Main Reasons behind ESP Reading Difficulties	Main Reasons behind ESP writing Difficulties
Inadequate Vocabulary Knowledge and limited range of vocabulary unable to understand the context of the written discourse, idiomatic expressions used in authentic texts. Insufficient reading practice especially the one related to their field of study (nursing). unconducive English reading environment, which is more centered more on listening and speaking.	Inadequate Vocabulary Knowledge and limited range of vocabulary unable to express their ideas adequately when writing. Sometimes able to understand what the words mean but less able to employ them in an appropriate context. Uncertain of the way to build and use complex sentence structures. Uncertain of the suitable use of grammar, vocabulary and syntax. Inadequate writing practice

4.2. Vocabulary Learning Strategies Used by the Participants

Based on the responses given by the participants in the interview, the vocabulary learning strategies mostly used by them when dealing with ESP and ESL vocabulary are illustrated in figure 3 below:

Table 5. the vocabulary learning strategies mostly used by them when dealing with ESP

Metacognitive Strate-gies	Translation Strate-gies	Social Strate-gies	Deter-mina-tion Strate-gies	Memory Strategies	Cognitive Strategies
Read English news and articles online Read medi-cal articles in English. skip or pass difficult medical English words. write meaning of new medical words in English	write meanings of new words in the native language.	Learn by group work in class. Learn by pair work in class Ask English language teacher for translation into native language	use a thesaurus dictionary use picture dictionary make a list of difficult medical words illustrated in pictures. guess from textual context in reading. ask other people (e.g. a classmate, the teacher, or one of my family members)	Study the word's relationship with other words. Connect the word list to its synonyms and antonyms.Use new words in sentences. Memorize the meaning of affixes and roots. Connect words to personal experience. Study the sound of a word Study new word aloud when studying.	Use the vocabulary section in the course-book. Take notes in the class Write wordlists of new words Paraphrase the meaning of new words. Say the word several times Look at the word several times Memorize Indonesian-English/ English/Indonesian lists. Try to imagine how the word looks like.

The table above includes all the strategies mentioned by the participants in the interviews, the researcher classified them in categories based on the vocabulary learning strategies taxonomy proposed by Schmitt (2000) that divided VLSs into two main categories, determination and consolidation strategies, each category has been divided into sub-categories as illustrated in the table above. From the table above, it can be concluded that the 40 ESP students use wide ranges of VLSs even not all the strategies given by Schmitt (2000) have been employed by the participants through their vocabulary learning journey.

Think-Aloud Finding Analysis

While doing the reading task, the participants used the thinking aloud protocols to tell about the thinking process and the intuitions leading them to employ certain strategies for deducing the meaning of ESP words from the reading task.

The think-alouds was more beneficial in terms of providing deeper insight of the thinking process behind the participants' VLS selection and use as well as the way they guessed or deduced the word meaning of the nursing eight vocabulary items. The strategy that was firstly used by the participants is guessing from the context. Twenty participants tried to translate the surrounding words into the native language as an initiative to have the unknown words meaning obtained, after failing this strategy, some of them tried to remember the meaning of the word by remembering the pictures of medical instruments they used in the class especially for the word "a tourniquet". The participants' responses to the vocabulary items, 'forceps' and 'catheter', ensured that learners could have different connotations of certain vocabulary even they study in the same major, some of the participants related forceps, "an instrument similar to a pair of scissors that is used for holding or polling, to wounds while others related them to surgeries. The think-alouds also provided a strong evidence of the close relationship between a learner's vocabulary knowledge and guessing from contextual clues: the more difficult it is to guess the word meaning, the more the learner would look for contextual clues and more elaboration to illustrate the word meaning would be made.

Another finding reinforces the close link between a learner's knowledge of grammar and syntax and vocabulary knowledge. These participants tried to identify the grammatical function of a word (subject, verb, adverb, adjective) in the sentence in order to facilitate them finding its meaning. the participants said that they used such strategy initially because they were quite confident with their grammar mastery. Other strategies used by the ESP learners were, using both monolingual and bilingual dictionary, asking the instructor for translation/paraphrase, or elaboration of the word. Only two participants skipped the first and the second word giving up on finding their meanings, while 4 participants skipped some words initially as an initiative to deal with the easiest meanings first. As another remark noticed by the researcher is that three of the participants used their smart phones to find the meaning of the some words (Google translate), but they tried to confirm the meaning by putting the meaning in a translated context and see whether it fits it or not.

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Conclusion

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It can be concluded that the role of vocabulary in enriching the language deposit of the EFL learners in general and ESP learners in particular leads to the urgent necessity of highlighting the matters and obstacles facing the vocabulary learning process. The current study gives a significant part of attention to the ESP since this field still lack of insightful researches and studies. It sheds the light on the use of VLSs by ESP students, it focused on ESP context as a unique situation since the ESP vocabularies are considered as low frequency words. From the findings of the study, ESP learners use several varieties of strategies to deal with the ESL vocabularies in general and ESP in particular. The current study showed that the ESP learners still need to be introduced to more varieties of VLSs by their teachers, especially the VLSs that can be used at home, so they can autonomously expand their vocabulary knowledge. thus, the use of different varieties of VLSs supports the learners' autonomy and motivation. VLSs should be given more devoting attention to be well integrated in ESP learning materials to facilitate ESP learners acquiring the technical vocabulary needed for their area of specialism. The aspect of developing ESP learning materials that incorporate VLS systematically should be well emphasized in the future researches and studies.

Acknowledgement

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