

# Types of Context Clues and Vocabulary Meaning Inference: Abilities and Perceptions of English Major Undergraduate Students

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Article information	Abstract
<p><b>Article history:</b> Received: 1 Jul 2021 Accepted: 24 Oct 2021 Available online: 27 Oct 2021</p>	<p>The context clue strategy to derive the meaning of unfamiliar words and its effectiveness have been generally accepted, and the strategy is widely taught to ESL/EFL students. This study aimed to (1) compare the abilities in making use of context clues to derive the meaning of vocabulary among four groups of English major undergraduate students (Years 1-4); (2) compare the abilities to identify the context clues used to derive the meaning of unfamiliar words among the four student groups; (3) investigate the correlation between ability and context clues used to derive the meaning of unfamiliar words; and (4) investigate students' opinions towards using the context clue strategy to derive the meaning of unfamiliar words. A 40-item vocabulary test and a set of questionnaires were administered to English major undergraduate students in the Faculty of Liberal Arts at a university in Thailand in the second semester of the academic year 2020. Then, 39 responses were randomly selected from each student batch to be the study sample. Three students from each student group were randomly selected to be interviewed to gather more in-depth information. The findings revealed that the ability to use context clues to derive the meaning of unfamiliar words among the four groups of English major undergraduate students was significantly different. Conversely, there was no significant difference in their ability to correctly identify the context clue types they used to infer word definitions. Also, there was a significant correlation between both abilities. Moreover, the students showed positive opinions towards the use of context clues to infer the meaning of vocabulary and provided some interesting ideas regarding the teaching of context clues for ESL/EFL teachers and English major program committees.</p>
<p><b>Keywords:</b> Context clues Vocabulary meaning inference English major undergraduate students English as a Foreign Language (EFL) English Language Teaching (ELT)</p>	

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## INTRODUCTION

In this era of globalization, English serves as a lingua franca (Crystal, 2012) and is used as a mother tongue, a second language, and a foreign language (Kachru, 1985). English, in Thailand, has been recognized as a foreign language for centuries (Bennui & Hashim, 2014). Nowadays,

English is widely used in both academic and professional aspects, especially as Thailand became part of the Association of Southeast Asian Nations (ASEAN). As a result, the Thai government has encouraged every educational institute in Thailand to put more emphasis on English, especially in the tertiary level institutes. An example of the effect of this policy can be seen at Mahidol University (2017), where English language competency has been designated as a requirement for graduation. Mahidol University (Mahidol University Division of Planning, 2018) also encourages its students to acquire globally-applicable skills to better compete in the world labor market.

To acquire the four skills of English (listening, speaking, reading, and writing), competency in both grammar and vocabulary is a crucial factor (Alara, 2015; Richards & Renandya, 2002). In tertiary education, inadequate vocabulary can be one of the major problems for L2 learners (Liu, 1998). To overcome this, teachers have tried to search for optimal ways to develop their students' vocabulary ability, and the context clue strategy is one of the most highly recommended (Fudhla et al., 2019).

When encountering an unfamiliar word, many students immediately look up the meaning of the word using an electronic or a printed dictionary. However, it is impossible for the students to consult a dictionary every time they encounter an unfamiliar word because it may impede their task completion (Knight, 1994). Also, for some words, there is more than one meaning, so students sometimes select the wrong meaning, resulting in misunderstanding (Tang, 1997). Therefore, for long term academic success, the use of context clues (Al-Zoubi, 2018; Bishop et al., 2009; Ilter, 2019; Karbalaee et al., 2012; Walters, 2006), both internal (i.e., morphological word formation) and external (i.e., surrounding context) (Fukkink, 2005), is a key vocabulary strategy to help students learn the meaning of unfamiliar words.

At the tertiary education level, English major undergraduate students in the Faculty of Liberal Arts have to focus on learning various aspects in English such as English usage skills and English literature. As they are more exposed to English, their language ability, including drawing vocabulary meaning inferences, is developed (Al-Zoubi, 2018). However, the ability to use context clues among four different batches of English major undergraduate students (Years 1-4) has been little studied. Instead, most researchers have focused solely on the effectiveness of teaching the context clue strategy in the classroom using various approaches. Therefore, in this research study, the students' ability to use context clues and to identify context clue types to infer word meanings among four student batches and the correlation between them will be explored. Moreover, the students' opinions regarding the context clue strategy to derive the meaning of unfamiliar words will be investigated. The findings from this research study can benefit three main stakeholders. Firstly, the students will be able to evaluate their own ability to infer the meaning of unfamiliar words, which can raise their awareness and help them realize that the strategy is truly practical for their present and future learning of English. Moreover, for the teachers, the findings reveal whether the students can apply the strategy of deriving the meaning of unfamiliar words that they have learned from the English courses in the English major program, and how they would prefer teachers to teach this strategy in the classroom. Last but not least, committees overseeing the English major program can determine whether the courses in their program should be improved regarding this aspect.

## LITERATURE REVIEW

In studying a foreign language, vocabulary plays a key role, just as grammar does (Ur, 1996). “... without grammar very little can be conveyed, without vocabulary nothing can be conveyed” (Wilkins, 1972, pp. 111-112). That is to say, without a variety of words, it is impossible for language learners to speak, listen, read, and write (Richards & Renandya, 2002).

### Context clues

When an English language learner comes across an unfamiliar word, apart from consulting a printed or an electronic dictionary (Chen, 2012; Lopera, 2019; Tang, 1997), using context clues, including word formation, is recommended to the learners (Carlo et al., 2004; Watanapokakul, 2006; Wilson, 2013). Since it is not possible to memorize the meanings of all words (Blanchard & Root, 2006), context clues can help learners derive the meaning of an unfamiliar word. Context clues refer to words in a sentence or a paragraph that provide hints to readers to help them figure out the meaning of unfamiliar words (Elder, 2008). Context clues can be categorized as internal (i.e., morphological word formation) and external (i.e., surrounding context) (Fukkink, 2005) or semantic features (e.g., definitions, synonyms, antonyms, examples, contrast, or logic), structural features (including grammatical or syntactic markers within a word or sentence), and morphological analysis (e.g., prefixes, roots of words, and suffixes) (Rasinski et al., 2008).

### Types of context clues

Different scholars have suggested that various context clues can be used to infer and derive the meaning of new or unfamiliar words in context. For instance, Nist and Mohr (2002) introduce four types of context clues: *examples*, *synonyms*, *antonyms*, and *general sense of a sentence*. Besides those, Blanchard and Root (2006) add two more types which are *definitions* and *word parts (word formation)*. Elder (2008) suggests similar types as Nist and Mohr (2002) and Blanchard and Root (2006) but adds one more type which is *the clue from another sentence*. Sattayatham (2007) proposes seven types: *examples*, *punctuation marks*, *restatement*, *contrast*, *common sense*, *context clues*, and *synonyms*. Apart from the context clues already mentioned, *cause and effect* is another type that helps figure out the meaning of unknown words (Chatprakarn & Pongpan, 1990; Parault et al., 2014). Based on the reviewed literature, ten types of context clues were compiled and implemented as a conceptual framework to develop a vocabulary test in this research study. The ten types of context clues are presented in Table 1.

**Table 1**  
**Ten types of context clues**

Clue Types	Key words/terms/phrases	References
1. Definition	verb to be (is, am, are, was, were), can be defined as, mean, be referred to as	Blanchard and Root (2006); Elder (2008)
2. Punctuation	parentheses, dashes, commas	Sattayatham (2007)
3. Restatement	that is, in other words, i.e.	Sattayatham (2007)

Clue Types	Key words/terms/phrases	References
4. Example	for example, for instance, e.g., like, such as, to illustrate	Blanchard and Root (2006); Elder (2008); Nist and Mohr (2002); Sattayatham (2007)
5. Synonym	or	Blanchard and Root (2006); Elder (2008); Nist and Mohr (2002); Sattayatham (2007)
6. Antonym	but, by contrast, in contrast, however, on the other hand, although, instead (of)	Blanchard and Root (2006); Elder (2008); Nist and Mohr (2002); Sattayatham (2007)
7. Cause and effect	as, because, for, because of, due to, hence	Chatprakarn and Pongpan (1990); Parault et al. (2014)
8. General sense of a sentence	using prior knowledge or experience to determine the meaning of unfamiliar words (2002)	Blanchard and Root (2006); Elder (2008); Nist and Mohr (2002)
9. Clues from another sentence	information from another sentence that helps identify the meaning of unknown words	Elder (2008); Sattayatham (2007)
10. Word structure (Word formation)	prefixes, roots, and suffixes	Blanchard and Root (2006); Elder (2008)

Employing the context clues, a number of researchers have implemented various instructional strategies in the classroom to improve the students' vocabulary acquisition and reading comprehension (Daneman & Green, 1986; Nash & Snowling, 2006), such as explicit teaching (Karbalaee et al., 2012), morphemic analysis (Watanapokakul, 2006), a rule-and-practice treatment and a practice-only treatment (Carnine et al., 1984), and active teaching and practice (Patberg et al., 1984). However, some students do not know how to exploit context to infer the vocabulary meaning, and they often do not recognize clues in the sentence even though they are present (Karbalaee et al., 2012). As a consequence, context clues should be explicitly taught to students (Bishop et al., 2009; Buikema & Graves, 1993) using instructional activities like cloze exercises (Bishop et al., 2009; Walters, 2006) and clue hunts (Bishop et al., 2009) in order to help them know how to make use of context clues for promoting their vocabulary growth (Gambrell & Headley, 2006) and vocabulary retention (Innaci & Sam, 2017).

Even though the context clue strategy has proved its effectiveness to improve ESL/EFL learners' vocabulary learning and reading comprehension skills (Baldoza-Castro, 2015), it still has some limitations (Innaci & Sam, 2017). For instance, context might not provide the reader with the full or exact meaning of a word when the context clues such as synonyms or antonyms are used (Fukkink, 2005). Moreover, some students who have a limited lexicon or have poor vocabulary skills may have difficulty and spend too much time trying to infer the vocabulary meaning by using context clues (Fudhla et al., 2019; Innaci & Sam, 2017). While many research studies have discussed the effectiveness of the context clue strategy to derive the meaning of unfamiliar words and to improve reading comprehension (Baldoza-Castro, 2015; Daneman & Green, 1986; Nash & Snowling, 2006; Reardon, 2011; Tuyen & Huyen, 2019; Watanapokakul, 2006; Wulandari, 2017), students' attitudes towards specific vocabulary learning strategies

like context clues have not been fully investigated (Ellasa, 2015). This prompted Ellasa to conduct a study to explore junior high school students' attitudes towards the context clue strategy in learning vocabulary. The findings showed that students had positive attitudes towards the use of context clues to learn new English vocabulary both inside and outside the school and perceived the advantages of the context clue strategy.

### Research objectives

This study contains four main research objectives, which are as follows:

1. to compare the abilities in making use of context clues to derive the meaning of vocabulary among four groups of English major undergraduate students (Years 1-4);
2. to compare the abilities to identify the context clues used to derive the meaning of unfamiliar words among the four student groups;
3. to investigate the correlation between students' abilities and context clues used to derive the meaning of unfamiliar words; and
4. to investigate students' opinions towards using the context clue strategy to derive the meaning of unfamiliar words.

### Research hypotheses

Based on the literature review of the study, the four hypotheses were set as follows:

**Hypothesis 1:** On average, the students in higher batches (older or 'more senior' class years) have a significantly higher ability to make use of the context clues to derive the meaning of unfamiliar words than those in lower batches at  $\alpha = 0.05$ .

**Hypothesis 2:** On average, the students in higher batches can identify which context clues are used to derive the meaning of unfamiliar words at a significantly higher level than those in lower batches at  $\alpha = 0.05$ .

**Hypothesis 3:** There is no significant correlation between the students' scores regarding two variables, namely the ability to use context clues to derive the meaning of unfamiliar words and the ability to identify context clues to derive the meaning of unfamiliar words at  $\alpha = 0.05$ .

**Hypothesis 4:** On average, the students have positive opinions towards the use of the context clue strategy to derive the meaning of unfamiliar words.

### Research questions

This study attempts to answer the following research questions:

1. What are the differences in the abilities to make use of context clues to derive the meaning of unfamiliar words among four batches of English major undergraduate students (Years 1-4)?
2. What are the differences in the abilities to identify the context clues to derive the meaning of unfamiliar words among four student batches (Years 1-4)?
3. What is the correlation between the students' abilities and context clues to derive the meaning of unfamiliar words?
4. What are the students' opinions towards using the context clue strategy to derive the meaning of unfamiliar words?

## RESEARCH METHODOLOGY

### Participants

The population of the study was 255 English major undergraduate students (Years 1-4) in the Faculty of Liberal Arts at a university in Thailand in semester two of the academic year 2020. There were 75 freshmen, 57 sophomores, 64 juniors, and 59 seniors. According to Yamane's (1973) sample size formula with 95% confidence level, the sample size of the population of 255 students is 155.725. Thus, 39 students from each student batch served as the sample group of the study. The researchers used the convenience sampling technique to select students from a learning section of each batch group to participate in taking the English vocabulary test and completing the questionnaires. Then, the researchers randomly selected 39 responses from each group—156 responses in total—for the data analysis.

Three of the students in each batch group were randomly selected to participate in semi-structured interviews to elicit in-depth information. Thus, there were altogether 12 randomly selected interviewees.

All of the sample groups were over 18 years old. To protect the rights and welfare of the research population and participants, the research proposal was sent to the Center of Ethical Reinforcement for Research of the university for approval. Before doing the vocabulary test, all participants were provided with information on the research. If they were interested in joining the study, they were asked to check the box indicating 'consent.' However, they had the right to opt out if they were not comfortable with participating in the study. The data collection was anonymous, and the responses from the participants and their private information were confidentially kept and immediately destroyed after the study was completed.

### Research instruments

There were three main research instruments: a vocabulary test, a set of questionnaires, and semi-structured interview questions.

#### 1. A vocabulary test

The main purpose of the vocabulary test was to assess the students' ability to infer the meaning of unknown words and to identify the context clue types they used. The test was developed based on the 10 types of context clues, showed in Table 1, the conceptual framework of this research study. The test consisted of 40 items (80 points in total). Each item had an underlined unfamiliar word or phrase, selected from the GRE essential word list (Geer, 2016). The test takers were required to complete two steps for each item: (1) write the meaning of the underlined word or phrase in the blank provided (1 point) and (2) identify the context clue types they used to derive the meaning of that particular word/phrase (e.g., punctuation, definition, or word formation, etc.) (1 point). To avoid language barriers, they could answer each test item in English and/or Thai. Here is a sample test item of the vocabulary test:

**Instructions: There are 40 test items, and each test item requires you to answer/identify as follows:**

- A. The meaning of the underlined word or phrase
- B. The type of context clues you use to derive the meaning of the underlined word or phrase

Example: James had become bankrupt, so he faced a financially precarious situation.

- A. Meaning of “precarious”: unsafe, insecure
- B. Type of the Context Clues used: cause and effect

## 2. A set of questionnaires

A set of questionnaires was developed based on the literature review, including related previous studies. The questionnaire consisted of two main parts. The first part asked the students’ demographic information and contained six items. The second asked for their opinions towards the use of context clues to derive the meaning of unfamiliar words. There were eight items in this part.

## 3. A set of semi-structured interview questions

A set of six semi-structured interview questions elicited the interviewees’ in-depth information regarding the abilities and strategies used to derive the meaning of unfamiliar words.

All of the instruments were validated by five experts in the field of ESL/EFL using Item-Objective Congruence Index (IOC), proposed by Rovinelli and Hambleton (1977), to obtain content validity. The IOC indexes of the vocabulary test, the questionnaire, and the semi-structured interview questions were 0.80, 0.83, and 0.77, respectively. Revisions were made based on the experts’ comments and IOC indexes. After that, a pilot study of the vocabulary test and the questionnaire was conducted with 30 students who had the same characteristics as the sample group to determine the reliability of each research instrument and the feasibility of some important components of the full-scale study. To make sure that the vocabulary test was reliable and free of errors for data collection, Cronbach’s alpha (Cronbach, 1951), which ranges between 0-1, was used to determine the vocabulary test’s reliability coefficient. It was found to be 0.75 and had a range of more than 0.7 (Dörnyei, 2003). Based on the pilot study’s results, another modification was made to the research instruments. For the vocabulary test, the context clues for some items were adjusted to make them clearer; moreover, the possible answers for some items were added. For the questionnaire, some word usage and spellings were adjusted. Also, five students were randomly selected from those 30 students to participate in a pilot study of the semi-structured interview questions. After that, some questions were modified and deleted to avoid repetition and ambiguity.

## Data collection

At the end of February 2021, the students were asked to do the vocabulary test through Google Form. Students were allowed 50 minutes to finish the test and another 10 minutes to complete the online questionnaire. After completing the test and the questionnaire, three students from each student batch were randomly selected to participate in the semi-structured interviews. Each 10-15-minute individual interview was conducted through an online application—Zoom Meetings—in Thai language to avoid language barriers and obtain the most accurate information and also video-recorded.

The interrater technique was used to mark the students' tests, interpret the responses from the questionnaires, and transcribe responses from the interviews in order to obtain reliable results. The Pearson product-moment correlation coefficient was used to calculate the pairwise correlation among two raters, which was 0.9, showing high correlation.

## Data analysis

### 1. The vocabulary test

The findings from the vocabulary test were analyzed with SPSS version 26. One-way ANOVA was used to analyze the findings from the vocabulary test to prove Hypotheses 1 and 2. Also, the Pearson correlation coefficient was used to analyze the findings from the vocabulary test to prove Hypothesis 3.

### 2. The set of questionnaires

The results from the questionnaires were quantitatively analyzed using descriptive statistics (e.g., frequency and percentage). The findings from the questionnaires were used to prove Hypothesis 4.

### 3. The semi-structured interviews

The data from the semi-structured interviews were analyzed using content analysis involving tallying and grouping. In this process, the qualitative data were transformed into quantitative data (Krippendorff, 2013) to facilitate further analysis. The findings from the semi-structured interviews were used to prove Hypothesis 4.

## FINDINGS

The findings are presented based on the four hypotheses of the study:

**Hypothesis 1:** On average, the students in higher batches (older or 'more senior' class years) have a significantly higher ability to make use of the context clues to derive the meaning of unfamiliar words than those in lower batches at  $\alpha = 0.05$ .



Table 2

The different means of the students' ability to make use of the context clue strategy to derive the meaning of unfamiliar words among four student batches

Subjects	n	Subset of means for alpha = 0.05*			
		1	2	3	4
Year 1	39	10.67			
Year 2	39		19.97		
Year 3	39			25.90	
Year 4	39				31.54

\*  $p < 0.05$

Table 2 shows that the mean scores of the ability to use the context clue strategy to derive the meaning of unfamiliar words among four student batches were significantly different and could be classified into 4 main groups ( $p = 0.05$ ). On average, the students in Year 4 had the highest score in using the context clues to derive the meaning of unfamiliar words, and their score was higher than that of the students in Years 3, 2 and 1. In other words, the means of the students in Years 4, 3, 2 and 1 are arranged in a descending order. Generally speaking, Hypothesis 1 was accepted.

**Hypothesis 2:** On average, the students in higher batches can identify which context clues are used to derive the meaning of unfamiliar words at a significantly higher level than those in lower batches at  $\alpha = 0.05$ .

Table 3

The different means of the ability to identify the types of context clues to derive the meaning of unfamiliar words among four student batches

Subjects	n	Subset of means for alpha = 0.05*		
		1	2	3
Year 1	39	3.76		
Year 2	39		8.05	
Year 3	39		8.54	
Year 4	39			15.79

\*  $p < 0.05$

Table 3 shows that the mean scores of the students in the 4 batches could be classified into 3 main groups, and they were significantly different ( $p = 0.05$ ). On average, the students in Year 4 had the highest score in identifying the context clues they used to derive the meaning of unfamiliar words, and their score was higher than that of the students in Years 3, 2 and 1. However, the mean scores of the students in Years 2 and 3 were not significantly different. Generally speaking, Hypothesis 2 was rejected.

**Hypothesis 3:** There is no significant correlation between the students' scores regarding two variables, namely the ability to use context clues to derive the meaning of unfamiliar words and the ability to identify context clues to derive the meaning of unfamiliar words at  $\alpha = 0.05$ .

**Table 4**  
**The correlation between the two variables**

Subjects	n	Subset of means for alpha = 0.05*	
		Ability to derive the meaning	Ability to identify the context clue types
Ability to derive the meaning	156	-	.79
Ability to identify the context clue types	156		-

\* p < 0.05

Table 4 shows that there was a significant correlation between the ability to use context clues to derive the meaning of unfamiliar words and the ability to identify the context clue types to derive the meaning of unfamiliar words at 0.79 ( $p < 0.05$ ). Specifically, 62.42% ( $0.79^2 \times 100$ ) of the variance of the students' abilities to infer the unknown word meaning can be explained by the ability to identify context clue types to derive the meaning of unfamiliar words and vice versa. Generally speaking, the mentioned correlation was at a very high level. It implies that the students who had high scores in deriving the meaning of unfamiliar words also had a high ability to identify the context clue types and vice versa. Thus, Hypothesis 3 was rejected.

**Hypothesis 4:** On average, the students have positive opinions towards the use of the context clue strategy to derive the meaning of unfamiliar words.

To prove this hypothesis, questionnaires and semi-structured interviews were used to collect the data. The data transformation model of the triangulation design (Creswell & Plano Clark, 2018) was used to analyze the data from the questionnaires and the interviews. The findings from the questionnaires were quantitatively analyzed and presented using frequency and percentage. The semi-structured interview responses were analyzed using content analysis, which involved tallying and grouping, and then transformed into quantitative data (Krippendorff, 2013), using percentage, in order to facilitate the comparison, interrelation, and further analysis.

### Findings from the questionnaires

Table 5 (See Appendix) presents the findings from 156 questionnaires, which were clearly categorized into 4 student batches.

From Part 1 of the questionnaires, the respondents consisted of 12 male students (7.69%) and 144 female students (92.31%). Most of them (83.97%), whose GPAs ranged from 3.01-4.00, had high levels in academic performance. For self-evaluation of their English skills, most of them considered their receptive skills good (70.15% for listening and 47.44% for reading) and their productive skills fair (50.64% for speaking and 42.95% for writing). As for their preferences for each English skill, 60.90% very liked listening, 50.64% liked speaking, and 41.03% liked reading. However, 44.23% reported that they disliked writing.

The second part of the questionnaires elicited the students' opinions towards the use of context clues to derive the meaning of unfamiliar words. When they came across an unfamiliar word, 59.62% of the students reported that they skipped it and continued reading. 34.62% searched for the meaning of that word. Of those who sought out the meaning of the unfamiliar word, most looked up the meaning of the word using online search engines (39.10%) and online dictionaries (32.69%). Only 25% used context clues to help them. Almost all of the students (98.72%) agreed that context clues were important and beneficial to them, and 98.08% said that it was not necessary to correctly identify the types of context clues in order to derive the meaning of unfamiliar words. Although most of them had learned (91.03%) and read (32.05%) about the context clue strategy before, almost all of the students (98.72%) recommended that the context clue strategy should be taught to English major students in the reading class (76.28%), either via lectures (88.46%) or by doing exercises on worksheets (87.18%).

### Findings from the interviews

Data from interviewing 12 students showed students' opinions towards the use of the context clue strategy to derive the meaning of unfamiliar words. The findings from the semi-structured interviews were analyzed, tallied, grouped, and finally transformed into quantitative data. A narrative report was presented as follows:

Question 1 asked whether context clues could help them guess the meaning of unknown words. All students in Years 2-4 (100%) but about two-thirds of Year 1 students (66.6%) revealed that context clues generally helped determine the meaning of unfamiliar words. Context clues helped Year 2 students identify the meaning of technical terms (33.3%). Although 83.33% of students in both Years 3 and 4 could not identify the exact meaning of unfamiliar words, context clues, at least, signaled the tone of the word meaning, whether it was positive or negative.

In Question 2, which asked whether the students had learned about context clues, some Year 1 students (66.66%) said they were taught word structure when in high school. Meanwhile, all students in Years 2-4 revealed that they had studied about word structure at least once before studying in the university (100%), but they (55.55%) did not realize its significance until both context clue strategy and word structure were introduced in their reading classes. All Year 4 students (100%) admitted that they learned the context clue strategy when they were studying in courses in Years 2 and 3 (i.e., *Fundamental Academic Reading* and *Analytical Reading*).

Question 3 asked how the students applied context clues to their studies or daily life. All students (100%) said they used the context clue strategy when they could not use a dictionary such as during an exam. However, some students (66.66%) mentioned that they relied primarily on online search engines and online dictionaries rather than the context clue strategy for word meaning inference since they were not sure whether they could correctly infer the meaning from context clues. The students (83.33%) also admitted that they applied context clues to both academic and non-academic matters. Some (16.66%) stated that the context clue strategy was truly helpful when reading textbooks and researching a large amount of information for their studies. Some (41.66%) also reported that they subconsciously used such strategy when

they were watching movies or reading novels. Year 4 students (66.66%) stated that they used the context clue strategy more and often when studying in higher years.

In Question 4, exploring the students' use of context clues in the future, all students (100%) said in the future they would use the context clue strategy since it would save time searching for the meaning of a word in the dictionary, and 75% of the students mentioned that it would help in their future studies and when taking an academic proficiency test like IELTS.

In Question 5, investigating the necessity of teaching context clues in the classroom and the appropriate methods or activities that should be included, all students (100%) agreed that a brief lecture was needed in combination with other activities like drills and practices. Some preferred additional activities like games (33.33%), self-study and presentations (16.66%), and individual work (8.33%). However, 16.66% of the students suggested that if these additional activities were employed, the teacher must be aware of learners' preferences and time allocation since they might be time consuming in the classroom. Some (16.66%) suggested that the teacher should provide them with authentic and familiar materials, like newspapers and magazines, to enhance their learning experience. Also, some (8.33%) recommended that the teacher should make a summary of various context clue types, which they had learned, by the end of the class.

Question 6 asked whether it was necessary to identify the context clue types when guessing the meaning of unknown words. All students (100%) agreed that there was no need to identify the context clue types because the most important thing was the ability to derive the meaning of unfamiliar words. However, they (91.66%) believed it was necessary to know the key words/phrases that signaled the meaning of unfamiliar words so that they could ensure they guessed the meaning correctly.

Overall, from the questionnaires and the interviews, the students have positive opinions towards the use of the context clue strategy to derive the meaning of unfamiliar words. They accepted and indicated that the context clue strategy was fundamental to be learned in class, and it helped the students increase reading speed and save time. Thus, Hypothesis 4 was accepted.

## **DISCUSSION AND IMPLICATIONS**

The research findings show that context clues play an important role in ESL/EFL students' ability to derive the meaning of unfamiliar words (Mart, 2012). They save students' time in deriving word meanings (Hibbard, 2009), facilitate students' reading comprehension without requiring a dictionary (Mahmoud, 2016), assist students in inferring the meaning of unknown words without having to make a random guess (Hibbard, 2009) or at least provide them with an "educated guess" (Elder, 2008, p. 4), and are the powerful word-learning strategy to help students improve their vocabulary ability (Graves, 2006; Ilter, 2019; Nation, 2008). However, from the questionnaires, more students chose to use online search engines and consult online dictionaries rather than employing the context clue strategy when they wanted to derive the

meaning of an unfamiliar word. This is because, based on the interviews, the students were afraid that they would get the wrong meaning of the word. In fact, some words may have had more than one definition, so looking up the meaning of an unfamiliar word in online search engines or online dictionaries without considering the context of the word could cause misunderstanding (Tang, 1997). This suggested the teachers should put an emphasis on this strategy and provide the students with opportunities to practice and use it along the 4-year curriculum in order to enhance their confidence and develop their expertise in employing this strategy.

Clearly, students in Year 4 demonstrated a higher ability in using context clues to derive the meaning of unfamiliar words than those students in Years 3, 2, and 1. In other words, the more English courses they had taken, the greater their ability to utilize context clues to infer the meaning of words. However, this ability did not correlate with their ability to identify the types of context clues they used to derive the meaning of unfamiliar words. From the vocabulary test, Year 4 students had the highest ability to identify the types of context clues, followed by Years 3, 2, and 1. However, there was no significant difference between the ability of the students in Years 2 and 3. This aligns with the interview responses from the students in Years 2 and 3, which indicated that they just studied these skills for the first time in the *Fundamental Academic Reading* course and the *Analytical Reading* course. From the interviews, all of the students (100%) agreed that it was not important to identify which types of context clues they used as long as they were able to use the clues to help infer the word meanings. Most importantly, their ultimate goal was to correctly or appropriately derive the meaning of unfamiliar words.

Furthermore, in line with the study of Ellasa (2015), the students stated in the questionnaires and the interviews that they felt both external and internal context clue strategies were necessary and beneficial for them both academically and non-academically, i.e., reading textbooks for class as well as reading for pleasure. It is clear that context clues can be a helpful way for students to derive the meaning of unknown words while reading without help from the teacher (Mart, 2012), which contributes to the development of students' reading comprehension (Nash & Snowling, 2006). Moreover, the majority of the students indicated that they would like their teachers to teach the context clue strategy in the classroom by starting from a brief lecture on a variety of context clue types, followed by drills and practices. As for other activities like games or presentations, time constraints and learning styles are key factors to be considered. Also, including some authentic and familiar materials was preferred by the students. Authentic materials are vital for 21st century learning and can enhance the students' ability in EFL classroom (Umirova, 2020). Additionally, familiar materials do not make students struggle through texts when learning to define words within context (Ryder, 1986, p. 62). Thus, the instruction should start with presenting information in a concrete manner, which is familiar to the students, before moving to more abstract concepts.

From the above discussion, two main implications can be drawn. Firstly, in regards to pedagogical implications, as it is clear that comprehension is related to vocabulary skills, "... L2 learners ought to learn how to guess the meaning from the context" (Alsaawi, 2013, p. 12). Thus, in teaching context clues to infer word meanings, Fukkink (2002) reviewed three types of context clue instruction: "text-oriented clue instruction"—an instruction to recognize and use a variety

of clue types (e.g., synonym and antonym clues); “reader-oriented strategy”—a process analysis of the task such as searching for clues in the context, thinking of the meaning of an unfamiliar word, and a subsequent evaluation of the appropriate tentative answer; and “product-oriented definition instruction”—a general scheme to provide the word meaning. From the interview findings, students mentioned that it was necessary for them to correctly identify the clues in the context in order to obtain the correct meaning of the unknown words. Therefore, in the classroom, an eclectic approach using the three aforementioned types of instruction should be considered. In other words, teachers should teach the various context clue types and techniques for analyzing and using context clues together with providing examples and exercises to practice using the context clues and techniques to figure out the meaning of unknown words (Fukkink & De Gloppe, 1998; Shea & Ceprano, 2017). The ultimate goal, however, is for students to obtain an accurate understanding of the unknown words from the context clues (how to derive the word meaning) rather than being able to identify the types of context clues they use. Based on the findings, the students preferred a brief presentation of context clues, followed by some exercises to practice them. This is in line with the “direct instruction” proposed by Klingner et al. (2015, p. 81 as cited in Ilter, 2019, p. 4) stating that context clues should be taught with a systematic teacher-centered activity that includes a statement of the objective, modeling, guided practices, independent practices, a review of the knowledge gained, and instructional feedback. In order to improve students’ motivation and attention (Li, 2021) as well as their knowledge retention (Yildirim & Sunbul, 2017), classroom activities and games can also be included if time and students’ learning styles allow.

Secondly, the study provides a number of administrative implications. Seeing that students need to frequently see and use a word within context for long-term vocabulary retention and acquisition (Graves, 2006; Innaci & Sam, 2017; Mart 2012; Tuyen & Huyen, 2019), and not all first year students have enough basic knowledge of context clues, the English major program committee should set up a policy by explicitly introducing the context clue strategy together with providing some simple exercises and practices (Bishop et al., 2009) in a basic reading course to the freshmen. Then, in their subsequent years along the 4-year curriculum, this strategy should be scaffolded, reused, and applied in more complicated contexts and with various reading genres (Ilter, 2019) in different English major courses (Innaci & Sam, 2017) like English for Specific Purposes (ESP) and literature. For example, the context clue strategy can be integrated into *Mythological and Biblical Background to Literature* for sophomores; *English for Tourism* for juniors; and *American Literature* for seniors. Also, the context clue strategy should be offered to the students in combination with other reading strategies and vocabulary techniques (Reardon, 2011) such as *frontloading word meanings through instruction* and *word referents* (Shea & Ceprano, 2017, pp. 58-59) to improve overall reading comprehension. Once the students graduate, they can confidently and effectively apply the context clue strategy in both academic and non-academic contexts as well as in their future career. This can also encourage them to become lifelong learners (Kaplan, 2016).

Moreover, to stimulate students’ interest and motivation in vocabulary learning and reading comprehension, the program committee should put some effort into promoting the application of context clues inside and outside the classroom. An online course regarding the context clue strategy is an example of what can be initiated for the students to learn autonomously

(Muhammad, 2020). In addition, some extracurricular activities should be offered to the students to increase their use of the context clue strategy. Edutainment activities, like (online) games and language competitions, are one option (Abdalla, 2015; Ghafor et al., 2019; Watanapokakul, 2018) to elevate students' engagement (Klopfer et al., 2009) and to create an enjoyable learning atmosphere (Gozcu & Caganaga, 2016).

## CONCLUSION

It is quite clear that the context clue strategy is a fundamental part of reading comprehension (Nist & Mohr, 2002), so it is worth teaching this strategy to the students to enhance their vocabulary learning, which ultimately will result in better reading comprehension. Although there are many approaches and techniques for teaching the use of context clues, teachers should take students' learning styles and levels into consideration when designing lesson plans and activities. Moreover, English major program committees should plan the curriculum to scaffold and support student learning of vocabulary skills throughout the four years of university study. Once such measures have been put in place, "better input should yield improved outcomes" (Shea & Ceperano, 2017, p. 64).

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## Appendix

**Table 5**  
**Findings from the questionnaires**

PART 1: Students' demographic information and their background in English		Total (N = 156)		1 <sup>st</sup> year (N = 39)		2 <sup>nd</sup> year (N = 39)		3 <sup>rd</sup> year (N = 39)		4 <sup>th</sup> year (N = 39)	
Items	Choices	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
1. Sex	Male	12	7.69	3	7.69	2	5.13	6	15.38	1	2.56
	Female	144	92.31	36	92.31	37	94.87	33	84.62	38	97.44
2. GPAX	4.00-3.51	73	46.79	16	41.03	20	51.28	20	51.28	17	43.59
	3.50-3.01	58	37.18	13	33.33	16	41.03	12	30.77	17	43.59
	3.00-2.51	21	13.46	9	23.08	3	7.69	5	12.82	4	10.26
	2.50-2.01	4	2.56	1	2.56	0	0.00	2	5.13	1	2.56
3. English skill self-evaluation											
3.1 Listening	Excellent	30	19.23	4	10.26	8	20.51	9	23.08	9	23.08
	Good	110	70.51	24	61.54	28	71.79	29	74.36	29	74.36
	Fair	15	9.62	10	25.64	3	7.69	1	2.56	1	2.56
	Low	1	0.64	1	2.56	0	0.00	0	0.00	0	0.00
3.2 Speaking	Excellent	17	10.90	2	5.13	3	7.69	3	7.69	9	23.08
	Good	47	30.13	8	20.51	9	23.08	12	30.77	18	46.15
	Fair	79	50.64	26	66.67	21	53.85	22	56.41	10	25.64
	Low	13	8.33	3	7.69	6	15.38	2	5.13	2	5.13
3.3 Reading	Excellent	10	6.41	1	2.56	1	2.56	5	12.82	3	7.69
	Good	74	47.44	21	53.85	25	64.10	18	46.15	10	25.64
	Fair	56	35.90	11	28.21	10	25.64	13	33.33	22	56.41
	Low	16	10.26	6	15.38	3	7.69	3	7.69	4	10.26
3.4 Writing	Excellent	4	2.56	0	0.00	1	2.56	0	0.00	3	7.69
	Good	39	25.00	5	12.82	9	23.08	14	35.90	11	28.21
	Fair	67	42.95	19	48.72	18	46.15	15	38.46	15	38.46
	Low	46	29.49	15	38.46	11	28.21	10	25.64	10	25.64

PART 1: Students' demographic information and their background in English		Total (N = 156)		1 <sup>st</sup> year (N = 39)		2 <sup>nd</sup> year (N = 39)		3 <sup>rd</sup> year (N = 39)		4 <sup>th</sup> year (N = 39)	
Items	Choices	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
4. English preference	Like	151	96.79	38	97.44	38	97.44	37	94.87	38	97.44
	Dislike	1	0.64	0	0.00	1	2.56	0	0	0	0.00
	Indifferent	4	2.56	1	2.56	0	0.00	2	5.13	1	2.56
5. English skill preference											
5.1 Listening	Very like	95	60.90	21	53.85	24	61.54	27	69.23	23	58.97
	Like	50	32.05	13	33.33	11	28.21	12	30.77	14	35.90
	Dislike	10	6.41	4	10.26	4	10.26	0	0.00	2	5.13
	Very dislike	1	0.64	1	2.56	0	0.00	0	0.00	0	0.00
5.2 Speaking	Very like	56	35.90	11	28.21	15	38.46	14	35.90	16	41.03
	Like	79	50.64	16	41.03	20	51.28	21	53.85	22	56.41
	Dislike	14	8.97	7	17.95	4	10.26	2	5.13	1	2.56
	Very dislike	7	4.49	5	12.82	0	0.00	2	5.13	0	0.00
5.3 Reading	Very like	30	19.23	3	7.69	8	20.51	9	23.08	10	25.64
	Like	64	41.03	15	38.46	18	46.15	17	43.59	14	35.90
	Dislike	45	28.85	11	28.21	10	25.64	12	30.77	12	30.77
	Very dislike	17	10.90	10	25.64	3	7.69	1	2.56	3	7.69
5.4 Writing	Very like	11	7.05	0	0.00	2	5.13	5	12.82	4	10.26
	Like	60	38.46	14	35.90	17	43.59	11	28.21	18	46.15
	Dislike	69	44.23	15	38.46	19	48.72	20	51.28	15	38.46
	Very dislike	16	10.26	10	25.64	1	2.56	3	7.69	2	5.13
6. English difficulty	Difficult	79	50.64	21	53.85	20	51.28	20	51.28	18	46.15
	Easy	70	44.87	17	43.59	18	46.15	19	48.72	16	41.0
	Neutral	7	4.49	1	2.56	1	2.56	0	0.00	5	12.8

PART 2: Students' opinions towards the use of context clues to derive the meaning of unfamiliar words		Total (N = 156)		1 <sup>st</sup> year (N = 39)		2 <sup>nd</sup> year (N = 39)		3 <sup>rd</sup> year (N = 39)		4 <sup>th</sup> year (N = 39)	
Items	Choices	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
1. What do you usually do when you see an unfamiliar word?	Skip and continue reading	93	59.62	12	30.77	18	46.15	29	74.36	34	87.18
	Stop reading	9	5.77	6	15.38	3	7.69	0	0.00	0	0.00
	Find the meaning of that word	54	34.62	21	53.85	18	46.15	10	25.64	5	12.82
	Others	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
2. What do you usually do when you see an unfamiliar word and would like to know the meaning of that word? (You can choose more than one answer.)	Consult printed dictionaries	6	3.85	3	7.69	1	2.56	2	5.13	0	0.00
	Consult online dictionaries	51	32.69	8	20.51	17	43.59	14	35.90	12	30.77
	Use online search engines	61	39.10	23	58.97	13	33.33	13	33.33	12	30.77
	Ask friends	3	1.92	2	5.13	1	2.56	0	0.00	0	0.00
	Ask teachers	2	1.28	1	2.56	1	2.56	0	0.00	0	0.00
	Use the context clues	39	25.00	5	12.82	7	17.95	12	30.77	15	38.46
	others	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
3. Are context clues important and beneficial?	Yes	163	98.72	37	94.87	39	100.00	39	100.00	39	100.00
	No	2	1.28	2	5.13	0	0.00	0	0.00	0	0.00
4. Is it necessary to correctly identify the types of context clues in order to derive the meaning of unfamiliar words?	Yes	3	1.92	3	7.69	0	0.00	0	0.00	0	0.00
	No	153	98.08	36	92.31	39	100.00	39	100.00	39	100.00

PART 2: Students' opinions towards the use of context clues to derive the meaning of unfamiliar words		Total (N = 156)		1 <sup>st</sup> year (N = 39)		2 <sup>nd</sup> year (N = 39)		3 <sup>rd</sup> year (N = 39)		4 <sup>th</sup> year (N = 39)	
Items	Choices	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
5. How do you know about the context clue strategy? (You can choose more than one answer.)	I've learned them before.	142	91.03	25	64.10	39	100.00	39	100.00	39	100.00
	I read about them in some books.	50	32.05	0	0.00	14	35.90	15	38.46	20	51.28
	My friends told/taught me.	10	6.41	0	0.00	4	10.26	4	10.26	2	5.13
	I don't know them.	14	8.97	14	35.90	0	0.00	0	0.00	0	0.00
6. Should context clues be taught to English major students?	Yes	154	98.72	38	97.44	39	100.00	38	97.44	39	100.00
	No	2	1.28	1	2.56	0	0.00	1	2.56	0	0.00
7. Which English skill(s) should the context clue strategy be taught with?	Listening	23	14.74	3	7.69	8	20.51	4	10.26	8	20.51
	Speaking	6	3.85	1	2.56	1	2.56	4	10.26	0	0.00
	Reading	119	76.28	34	87.18	24	61.54	30	76.92	31	79.49
	Writing	8	5.13	1	2.56	6	15.38	1	2.56	0	0.00
8. Which are suitable for teaching context clues to derive the meaning of unfamiliar words? (You can choose more than one answer.)	In-class lectures	138	88.46	33	84.62	38	97.44	34	87.18	33	84.62
	Doing exercises on the worksheets	136	87.18	35	89.74	32	82.05	34	87.18	35	89.74
	Research and presentation to the class	25	16.03	1	2.56	6	15.38	8	20.51	10	25.64
	Self-studying	34	21.79	1	2.56	6	15.38	12	30.77	15	38.46



PART 2: Students' opinions towards the use of context clues to derive the meaning of unfamiliar words		Total (N = 156)		1 <sup>st</sup> year (N = 39)		2 <sup>nd</sup> year (N = 39)		3 <sup>rd</sup> year (N = 39)		4 <sup>th</sup> year (N = 39)	
Items	Choices	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
	Using games in the classroom	68	43.59	10	25.64	20	51.28	26	66.67	12	30.77
	Online lessons	60	38.46	2	5.13	16	41.03	22	56.41	20	51.28
	Others	1	0.64	1	2.56	0	0.00	0	0.00	0	0.00