

RELATIONSHIP BETWEEN VOCABULARY ACQUISITION AND INDIVIDUAL DIFFERENCES AMONG MIDDLE SCHOOL STUDENTS

Frankie SUBON^{1*}

Norseha UNIN²

¹ Quest International University, Perak, Malaysia

²Universiti Teknologi MARA, Sarawak, Malaysia

¹frankie.subon@qiu.edu.my

² norseha@uitm.edu.my

Manuscript received 16 March 2023

Manuscript accepted 8 December 2023

**Corresponding author*

<https://doi.org/10.33736/ils.5531.2023>

ABSTRACT

This paper explores the vocabulary acquisition of 143 middle school students from an East Malaysian school, examining its correlation with gender, attitudes, and perceived problems faced in vocabulary learning. Using the Contextualised Word Family (CONTEXTUALISED WORD FAMILY) model, the study tested the effectiveness of explicit vocabulary instruction over 30 sessions. The study utilised a one-group pretest-posttest design, measuring the learners' vocabulary size through the Productive Vocabulary Levels Test (PVLТ) and a questionnaire. The results showed an increase in vocabulary size with no significant difference based on gender, a very weak negative correlation with attitudes towards vocabulary learning, and mostly weak positive but significant relationships with three of the learners' perceived problems faced in vocabulary learning. This study provides some important pedagogical implications for teacher practice and recommendations for future research.

Keywords: vocabulary acquisition; Contextualised Word Family; explicit vocabulary instruction; individual differences; middle school students

Introduction

Vocabulary knowledge is important for second language (L2) and foreign language (FL) learners as it affects language growth (Al-Khasawneh, 2019; Lee et al., 2019; Silsüpür, 2017), academic success (Irvin & Blankenship, 2022), and communication skills (Viera, 2017). Tahir et al. (2020) found that the lack of vocabulary can hinder both spoken and written functions of L2 learners as they cannot express their intended meanings effectively. Wong et al. (2019) also argue that Malaysian students generally struggle with vocabulary competency despite many years of learning English in school. We assert that explicit vocabulary instruction is necessary for ESL classrooms to aid in vocabulary acquisition. Hence, a systematic approach with word families is necessary to accelerate vocabulary growth, as teaching individual words limits exposure to comprehensible input. When systematic and direct vocabulary instruction is lacking, it often leads to the teaching and learning of individual words in isolation which may hinder the development of language learners by limiting their vocabulary growth. In an L2 classroom, teachers usually teach students individual words. As a result, learners' vocabulary growth is impeded due to limited exposure to comprehensible input in the target language. By explicitly teaching words in groups or word families, students can accelerate their vocabulary acquisition (Schmitt, 2010). The lack of research on direct vocabulary instruction that utilises word families (Schmitt, 2008) and how to accelerate the vocabulary size of L2 learners in Malaysia (Haris & Yunus, 2018) resulted in the use of Contextualised Word Family Model (Subon, 2016) in this study to boost vocabulary learning and acquisition.

Evidently, individual differences (IDs) also play a crucial role in second language acquisition (SLA), as learners' various characteristics such as attitudes (Dörnyei, 2006), motivation, background knowledge, and gender can affect their ability to acquire the target language (Wilson, 2000). However, there is limited research on the effects of these IDs on L2 vocabulary knowledge and growth, and more studies are needed to examine their contributions (Lee, 2020) and the effects of learner differences on the usage of learning strategies (Halvaei & Ansarin, 2018). Yousefi and Biria (2018) propose future research to examine other prospective mediators, such as L2 learner variables that can affect the efficacy of L2 vocabulary instruction. On that note, this study focuses on three moderator variables, namely gender, attitudes, and perceptions of problems faced in vocabulary learning, to investigate their influence on vocabulary acquisition. These IDs are selected based on their important role in vocabulary acquisition, as gender is considered a relevant feature in SLA and attitudes (Lee & Pulido, 2017) and perceptions affect learners' ability to acquire the target language (Alhamami, 2022).

The study investigated the relationship between vocabulary acquisition and individual differences among middle school students. The specific aspects studied are students' vocabulary size before and after the treatment, gender difference in vocabulary size, and the relationship between learners' vocabulary size and their attitudes towards vocabulary learning. The three research hypotheses tested in this study are as follows:

- H1: There is a significant difference in vocabulary size between female and male learners.
- H2: There is a significant relationship between learners' vocabulary size and their attitudes towards vocabulary learning.
- H3: There are significant relationships between learners' vocabulary size and their perceptions of problems faced in vocabulary learning.

Literature Review

Acquiring a sufficient vocabulary size is crucial for L2 learners to achieve proficiency in their target language. According to Qian and Lin (2020), there is a significant relationship between vocabulary knowledge and overall English language proficiency. To comprehend 93% of a text, a proficient language learner should know at least 10,000 words (Sheehan, 2004). Moreover, Nemati (2010) argues that learners need a minimum of 2,000 high-frequency words to understand 80% of a running text. Adolphs and Schmitt (2003) state that a good knowledge of the most frequent 2,000-3,000-word families is necessary for basic everyday oral communication. However, Malaysian students are still lacking in vocabulary size that is beneficial for their studies. Sulaiman et al. (2018) found that Malaysian university students possess a low level of vocabulary threshold, leading to difficulties in understanding academic texts. Similarly, a study by Wong et al. (2019) involving 85 high school students in East Malaysia found that only half (51%) of the students had mastered the 2000-word level, suggesting that majority of them have not acquired vocabulary beyond the minimum level.

The importance of implementing direct vocabulary instruction in an ESL classroom is widely recognised due to students' limited vocabulary knowledge. Several studies have confirmed the positive effects of explicit instruction on vocabulary acquisition (Blachowicz & Fisher, 2000; Tahir et al., 2021). Explicit vocabulary instruction involves a teacher planning a lesson focused on expanding students' understanding of word meanings by targeting specific words (Blachowicz et al., 2006).

According to Beck et al. (2002), struggling readers and low-achieving students can learn one or two new words per day with explicit vocabulary instruction, while better students can learn as many as seven new words. This means that students can learn about 400 new words directly per year, adding 2,000 to 3,000 new words on average to their reading vocabulary annually. Ahmadi (2017) asserts that intentional vocabulary learning leads to better word memorisation and retention. Intentional learning activities have been shown to be the most effective for acquiring words, resulting in greater and faster gains, higher retention rates, and the ability to achieve productive levels of mastery compared to incidental learning (Webb et al., 2020).

Individual differences among learners have been found to significantly affect their ability to acquire a language input, particularly vocabulary. Wilson (2000) argues that learners' affective attributes can influence the "stickiness" or "penetration" of any comprehensible input. Gardner and MacIntyre (1992) classify learner characteristics into three main types: cognitive variables (e.g., language aptitude and language strategies),

affective variables (e.g., attitudes, motivation, and language anxiety), and other variables that can affect learners' cognition (e.g., age and socio-cultural experiences). This suggests that individual characteristics can be shaped by learners' cognitive, affective, and demographic variables. Additionally, Kidd, Donnelly, and Christiansen (2018) found significant variation among learners at any age and across their lifespan based on their review of recent research in psycholinguistics. Thus, it is evident that learners' individual differences, influenced by their cognitive, affective, and demographic variables, can impact the effectiveness of their vocabulary learning and acquisition.

According to Gu (2003), learners' individual characteristics greatly influence their choice of vocabulary learning strategies, rather than the task itself. This suggests a correlation between vocabulary learning strategies and individual differences such as personality, gender, motivation, self-efficacy, language aptitude, learning background, and learning styles. Mohseni-Far (2007) supports this idea, stating that the effectiveness of learning strategies is heavily dependent on individual learners and their attitudes, motivation, prior knowledge, and familiarity with the topic. Indeed, one's attitudes and perceptions towards the target language can contribute to their ability to acquire it (Alhamami, 2022). These findings highlight the significant roles of individual characteristics in both second language acquisition and vocabulary acquisition.

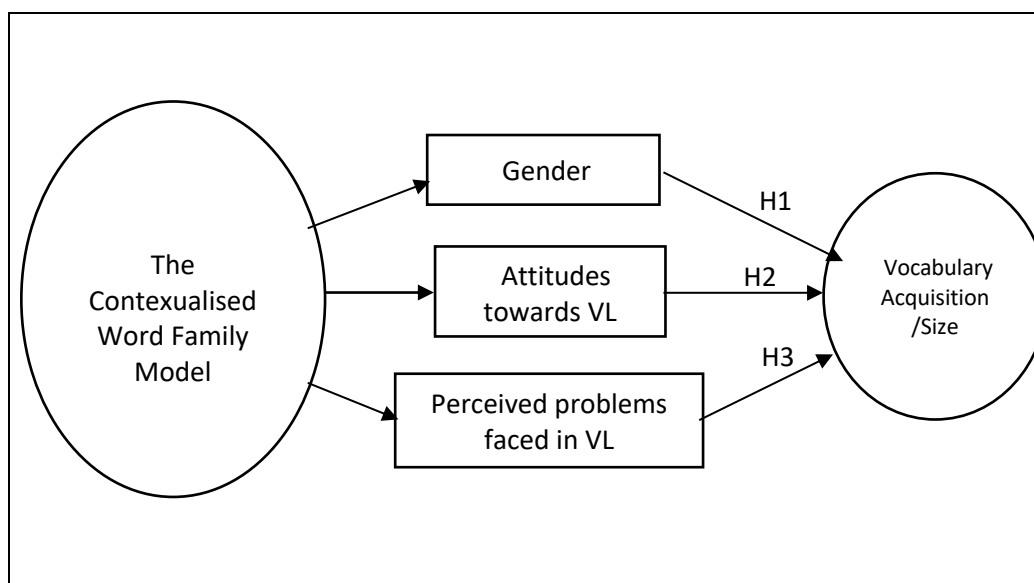
Research on vocabulary acquisition in Malaysia has mainly focused on the tertiary and elementary levels, neglecting the vocabulary proficiency of high school students (Chan & Aziz, 2021; Linda & Shah, 2020). Therefore, it is beneficial to conduct more vocabulary acquisition research involving middle school or high school students because they need to gain ample vocabulary size as a foundation for their future tertiary education. Moreover, there are limited studies examining the relationships between vocabulary acquisition or instruction type and learners' characteristics (Li et al., 2022; Mohseni-Far, 2007). Thus, it is essential to consider these individual differences when investigating learners' vocabulary acquisition, as they may significantly impact the effectiveness of a particular strategy employed (Li et al., 2022; Mohseni-Far, 2007).

Theoretical Framework

The theoretical framework of the study is the Contextualised Word Family Model which consists of seven steps for explicit vocabulary instruction (Figure 2) to help learners gain ample vocabulary size of at least a minimum of 2000 words. Earlier Vocabulary learning models such as Graves' Visionary Model (Graves, 2000), Frayer Model (Frayer et al., 1969) and the STAR Model (Blachowicz, 2005) only involved learning words in separation or individual words. Therefore, the present model integrates the important concept of word family with language learning contexts to form a new concept known as the contextualised word family (Figure 1).

Figure 1

Contextualised Word Family Model



Adapted from "Direct Vocabulary Instruction: The effects of contextualised word families on students' vocabulary acquisition" by Subon (2017)

This study involves three main types of variables, namely, the independent, moderating, and dependent variables. The independent variable is the Contextualised Word Family Model (Subon, 2016) which was used to administer the direct vocabulary instruction of word families. The dependent variable is the output in the form of vocabulary acquisition or size or scores the students obtained in the vocabulary tests before and after the treatment. The vocabulary size was also evaluated in terms of the influence of three moderating variables (learners' individual differences) namely gender, attitudes, and perceptions of problems faced in vocabulary learning. The purpose is to examine whether significant relationships exist between learners' vocabulary size and their individual differences or characteristics.

Methodology

Research Design

This study employed a one-group quasi-experimental design to investigate the research questions. Additionally, it utilised a quantitative method for its data collection process which was conducted in regular classroom settings. By employing a purposive sampling method, students from four classes (out of nine Form 2 classes) at a middle school or high school in Samarahan Division in East Malaysia were purposely selected as the participants of this study. Altogether, 143 students (62 males and 81 females) participated in the study and their ages ranged from 14 to 15 years old. Based on the criterion of the study design, they remained in their respective classrooms during the vocabulary learning treatment.

Instruments

Tests and questionnaires were used to collect data. The Productive Vocabulary Levels Test (PVLТ) by Laufer and Nation (1999) at 2000-word levels was adapted and administered during the Pre-test (Test 1) and Post-test (Test 2) to determine the students' vocabulary size. This test, which requires learners to complete the words used in sentences or checklists, has been found to be a reliable measure of vocabulary level (Zimmerman, 2005). It can provide reliable scores for students' mastery of vocabulary at various levels, including 2000, 3000, UWL, 5000, and 10,000-word levels. A pilot study involving 30 participants was conducted a week before the actual study, and the reliability test revealed that the two tests had a high reliability with a Cronbach's alpha of .85 (Hunt & Beglar, 1998).

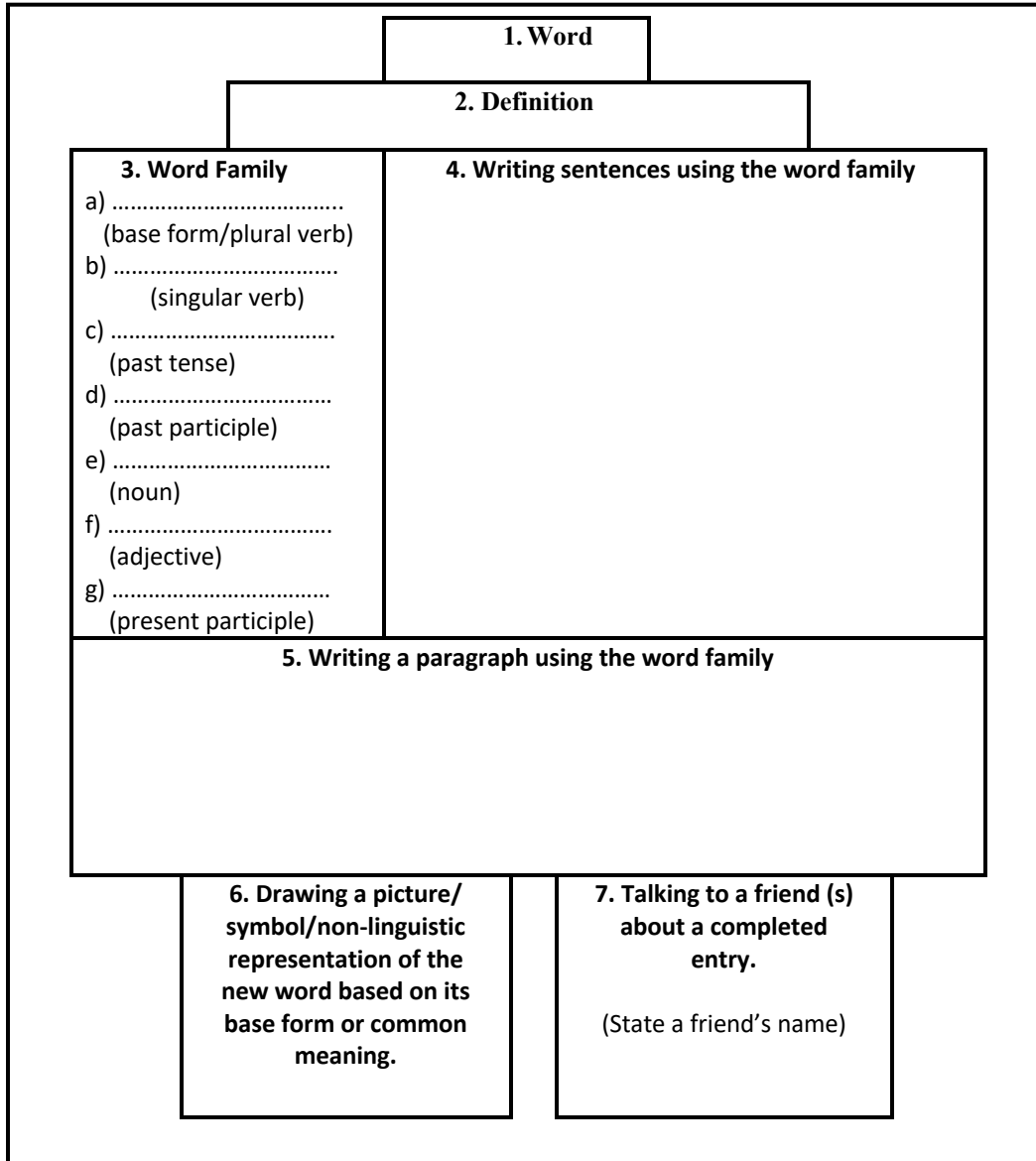
The Contextualised Word Family Model developed by Subon (2016) was used for explicit vocabulary instruction. This model was chosen for several reasons. Firstly, it is believed that by learning new words in word families, learners can acquire more vocabulary (Schmitt, 2000). Word families consist of related words based on their parts of speech, such as plural, singular, past tense, past participle, noun, adjective and present participle forms of a word. For example, the word "observe" has seven-word family members which include observe (plural), observes (singular), observed (past tense), observed (past participle), observer (noun), observable (adjective) and observing (present participle). Therefore, learning vocabulary in word families allows learners to acquire more words than learning individual words in isolation.

Furthermore, the Contextualised Word Family Model focuses on teaching tier two words, such as "respect", "occur", "serve", "accumulate", and "measure" which are considered high-utility words suitable for literate language users (McKeown & Beck, 2011). These words are essential to teaching as they convey important meanings to a text and are used in various kinds of texts (Nation, 2001). During the intervention, students were given a graphic organiser of the Contextualised Word Family Model, as shown in Figure 2, to help them learn the new vocabulary.

A questionnaire adapted from Ming (2007) was used to obtain the students' demographic details (Section A), their attitudes towards vocabulary learning, and perceptions of problems faced in vocabulary learning (Section B). To identify the learners' attitudes towards vocabulary learning, they were required to rate their attitudes based on a five-point Likert scales: 1 – "I dislike it very much", 2 – "I dislike it", 3 – "Neutral", 4 – "I like it" and 5 – "I like it very much". Next, to identify the students' perceptions of problems faced in vocabulary learning, they were also required to rate their perceived problems along a five-point Likert scales: 1 – "A major problem", 2 – "A problem", 3 – "Neutral", 4 – "Quite a problem" and 5 – "Not a problem". The questionnaire was tested for a reliability test, and it was proven to have a good reliability of .79.

Figure 2

The Contextualised Word Family Model of Direct Vocabulary Instruction



Taken from The Contextualised Word Family Model of Direct Vocabulary Instruction by Frankie Subon (2018).

Data Collection and Analysis Procedures

This research was conducted in accordance with the regulations for doctoral research as approved by the Institute of Graduate Studies and Research Ethics Committee of the

university. Before the data collection, informed consent was obtained from relevant parties, such as the education department, school principal, and parents of participating students. In addition, four English teachers from the school volunteered to deliver the lessons during the 30-day treatment period and were briefed by the researcher beforehand on the steps to follow. To facilitate the instruction process, each teacher was provided with a sample lesson plan as well as a completed entry for each word family to use as a guide during instruction.

Before the actual study began, a pilot study was conducted a week earlier. The experiment commenced with a pre-test, which was followed by a treatment that was conducted for thirty sessions. All 143 participants participated in the 30-day treatment period. They answered the pre-test and post-test prior to and after the treatment period and responded to the questionnaire. Each lesson lasted 30-35 minutes, during which the participants completed one entry of the Contextualised Word Family model (Figure 1) and were allowed to use a dictionary if necessary. In total, 30 sets of word families were taught by four teachers. The treatment was conducted three times a week during English lessons, and the teachers assigned take-home tasks to the students to continue with the mainstream syllabus. The post-test and questionnaire were administered immediately after the treatment period ended.

To analyse the data, both descriptive and inferential statistics were used. The students' vocabulary scores from the pre-test and post-test were converted into percentages. To estimate the students' vocabulary size, Schmitt and Meara's (1997) method was used, where a score out of a total score at each level represents the number of words a learner knows. For example, if a student scored 9 out of 18 at the 2000 level, this suggests that the student's vocabulary size was 1000 ($9 \times 2000/18$). A weak score at any level is defined as knowing fewer than 15 out of 18 items, or less than 83%, according to Nation (1990). To indicate a satisfactory mastery of the 2000-word level, a score of 15 out of 18 correct answers or 83.3% is considered the minimum score. The raw data from the pre-test and post-test were then analysed using SPSS version 22.0 to generate the statistical data analyses.

The students' vocabulary size scores before and after treatment were analysed and reported as frequencies and percentages. The significance of differences in vocabulary size test scores between genders was tested using an independent samples t-test. Frequencies, means, and standard deviations were computed to gain insight into students' attitudes towards vocabulary learning and any perceived difficulties they may have faced. Lastly, Spearman's rho correlation test was run to investigate whether any significant correlations existed between learners' vocabulary size and their attitudes towards vocabulary learning, as well as their perceptions of problems encountered.

Results

The results are reported for learners' vocabulary size, and its relationships with gender, attitudes towards vocabulary learning, and the perceptions of problems faced in vocabulary learning.

The Students' Vocabulary Size

The PVLТ 2000-word levels tests (Test 1 and Test 2) were administered for the pre-test and post-test to evaluate the students' vocabulary size prior to and after the treatment period. The Post-test was administered immediately after the 30-day of treatment.

Table 1
The Students' Vocabulary Size

Vocabulary Size	Frequency (Pre-test)	Percent (Pre-Test)	Frequency (Post-test)	Percent (Post-test)
0-<500	23	16.1	13	9.1
500-<1000	56	39.2	24	16.8
1000-<1500	46	32.2	62	43.4
1500-<2000	10	7.0	12	8.4
2000 L Mastery	8	5.6	32	22.4
Total	143	100.0	143	100.0

Table 1 shows that there was a slight increase in the students' vocabulary size. In the post-test, 32 or 22.4% students had mastered the 2000-word level (scored 83.3% and above) compared to only 8 or 5.6% students in the pre-test, an increase by 16.8% after the treatment. Although most of the students were unable to obtain 83.3% (2000-word level of vocabulary size), a majority of 106 (62+12+32) or 74.2% students had gained between 1000 and 2000 words (scored between 50% and 100%) than 64 or 44.8% students in the pre-test, an increase by 29.4%. Thus, there was a slight increase in the number or percentage of students who obtained a vocabulary size of between 1000 and 2000 words, and more students had acquired the 2000-word level after the treatment.

Vocabulary Size and Gender

There were 62 male and 81 female participants in this study. Table 2 shows the mean and standard deviation of the test scores. Male students scored slightly higher in both the pre-test ($M = 46.59$, $SD = 22.66$) and the post-test ($M = 62.72$, $SD = 19.39$) than female students ($M = 45.47$, $SD = 20.86$) and ($M = 59.32$, $SD = 21.75$)

However, the independent-samples t-test (Table 3) showed that there was no significant gender difference in the vocabulary size in both the pre-test, $M = 1.12$, 95% CI

[-6.19, 8.43], $t(125.55) = 0.30$, $p = .762$ and the post-test, $M = 3.40$, 95% CI [-3.42, 10.21], $t(137.69) = 0.99$, $p = .327$.

Table 2
Descriptive Statistics of Test Scores Between Genders

	Gender	N	Mean	Std. Deviation	Std. Error Mean
PVLТ 2000 Level (Test 1)	Male	62	46.59	22.66	2.88
	Female	81	45.47	20.86	2.32
PVLТ 2000 Level (Test 2)	Male	62	62.72	19.39	2.46
	Female	81	59.32	21.75	2.42

Table 3
The Independent Samples Test of the Comparison of Vocabulary Size Between Genders

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
PVLТ 2000 Level (Test 1)	Equal variances assumed	.85	.36	.31	141	.759	1.12	3.65	-6.10	8.35
	Equal variances not assumed			.30	125.55	.762	1.12	3.69	-6.19	8.43
PVLТ 2000 Level (Test 2)	Equal variances assumed	1.96	.16	.97	141	.334	3.40	3.50	-3.53	10.32
	Equal variances not assumed			.99	137.69	.327	3.40	3.45	-3.42	10.22

Relationship Between Learners' Vocabulary Size and Attitudes Towards Vocabulary Learning

Table 4 shows the frequency of the students' attitudes towards vocabulary learning. It shows that majority of the respondents rated their attitude as neutral (57 students or 39.9%), followed by "I like it" (55 students or 38.5%), "I like it very much" (13 students or 9.1%), "I dislike it" (11 students or 7.7%) and "I dislike it very much" (7 students or 4.9%).

Table 4*Frequency of Students' Attitudes Towards Vocabulary Learning*

		Frequency	Percent
Valid	I dislike it very much	7	4.9
	I dislike it	11	7.7
	Neutral	57	39.9
	I like it	55	38.5
	I like it very much	13	9.1
Total		143	100.0

Notes: 1 – "I dislike it very much", 2 – "I dislike it", 3 – "Neutral", 4 – "I like it", 5 – "I like it very much"

Table 5*Correlation Between Vocabulary Size and Learners' Attitudes Towards Vocabulary Learning*

		Attitudes towards VL	
Spearman's rho	PVLТ 2000 Level (Test 1)	Correlation Coefficient	-.095
		Sig. (2-tailed)	.261
		N	143
	PVLТ 2000 Level (Test 2)	Correlation Coefficient	-.142
		Sig. (2-tailed)	.091
		N	143

Table 5 displays the Spearman's rank-order correlation that was generated to assess the relationship between vocabulary size and learners' attitudes towards vocabulary learning. The analysis shows no significant correlation between vocabulary size and learners' attitudes towards vocabulary learning in both the pre-test, $r(141) = -.095, p = .261$ and the post-test, $r(141) = -.142, p = .091$. Vocabulary size is not associated with the learners' attitudes towards vocabulary learning.

Relationship Between Learners' Vocabulary Size and Perceptions of Problems Faced in Vocabulary Learning**Table 6***The Correlation Between the Learners' Vocabulary Size and Perceptions of Problems Faced in Vocabulary Learning*

P1 – I've difficulties increasing my vocabulary	P2 – I forget words I've learnt	P3 – I cannot use words properly	P4 – I cannot handle multiple meanings of words	P5 – I cannot remember new words
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Spearman's rho	PVLТ 2000 Level (Test 1)	Correlation Coefficient	.140	.109	.247**	.136	.268**
		Sig. (2-tailed)	.095	.194	.003	.105	.001
		N	143	143	143	143	143
	PVLТ 2000 Level (Test 2)	Correlation Coefficient	.139	.117	.203*	.184*	.179*
		Sig. (2-tailed)	.098	.165	.015	.028	.033
		N	143	143	143	143	143

Notes: *Significant at the 0.05 level (2-tailed). **Significant at the 0.01 level (2-tailed).

Table 6 shows that there are some significant relationships between learners' vocabulary size and perceptions of problems faced in vocabulary learning. In the pre-test, there were weak positive and statistically significant correlations between the vocabulary size and perception 3 – “I cannot use words properly” ($r(141) = .247, p = .003$), and perception 5 – “I cannot remember new words” ($r(141) = .268, p = .001$). In contrast, in the post-test, there was a weak positive and statistically significant correlation between the vocabulary size and perception 3 ($r(141) = .203, p = .015$). In addition, there was a very weak positive and statistically significant correlation between vocabulary size and perception 4 – “I cannot handle multiple meanings of words” ($r(141) = .184, p = .028$), and perception 5 – “I cannot remember new words” ($r(141) = .179, p = .033$). There were statistically significant relationships between learners' vocabulary size and three perceptions of problems faced in vocabulary learning, but the relationships were weak.

Discussion

The results show that there is a weak and non-significant relationship between learners' vocabulary acquisition and their individual differences. The results showing that there is no significant difference in vocabulary size between genders is consistent with Walker et al. (2020). However, this contrasts with other researchers who found significant gender differences. Llach and Gallego (2012) found significant differences in the receptive vocabulary acquisition among female and male Spanish students. The results of the present study also contradict the significant relationship between learning strategy employment and gender found by Mutua and Oyoo (2020) and Lee (2020).

The results of this study suggest that learners' attitudes towards vocabulary learning have no significant correlations with vocabulary size. This finding contrasts with other studies which found significant correlations. Bai (2020) study found a positive and significant relationship between positive attitudes and academic achievement. Moreover, previous research has found that vocabulary learning strategies are closely related to individual differences such as gender, motivation, self-efficacy, personality, language aptitude, learning background, and learning styles (Kidd et al., 2018). Mohseni-Far (2007) also argues that learners' characteristics, such as attitudes, motivation, prior knowledge, and topic familiarity, greatly influence the strategies employed and their effectiveness. Additionally, Thompson (2021) maintains that learners' attitudes can affect their success or failure in language learning. The results may be influenced by the method of study.

The present study shows weak and significant positive relationships between students' vocabulary size and their perceived problems in vocabulary learning. This finding is new since past studies have not specifically examined the relationships between these variables. In the pre-test, the students perceived that they had difficulty using words properly and remembering new words, while in the post-test, they also had difficulty handling multiple meanings of words. Although the relationships established were weak, they support recent claims that learners' attitudes and perceptions towards the target language influence their ability to acquire it (Alhamami, 2022). Furthermore, this finding is consistent with previous studies that found students encounter various problems in learning vocabulary, such as difficulty in pronunciation, correct usage, spelling, and understanding the meanings of new words (Afzal, 2019).

The use of tier 2 words for explicit instruction of contextualised word families in this study may have contributed to the finding that students had difficulty handling words with multiple meanings and using new words correctly. Thus, it is beneficial for teachers to choose suitable words for direct vocabulary instruction based on students' L2 acquisition abilities. While advanced learners can be taught high-frequency tier 2 words to improve their language ability (Beck et al., 2002), beginners and intermediate students may still need to be taught basic vocabulary (Chung, 2012). Overall, the weak relationships between learners' vocabulary size and perceptions of problems faced in vocabulary learning provide opportunities for further research in this area. It is essential to continue examining the relationship between these variables to gain a better understanding of vocabulary acquisition and the factors that influence it.

This study has shown that the use of the Contextualised Word Family Model (Subon, 2016) for explicit vocabulary instruction has resulted in a slight improvement in the participants' vocabulary growth. The treatment has led to an increase in vocabulary size among the participants, with more students reaching the 1000-word level and above, and more students being able to acquire the 2000-word level than before the treatment. This finding is consistent with previous research that emphasises the importance of explicit vocabulary instruction (Schmitt, 2008; Tahir et al., 2021).

Systematic vocabulary instruction such as the Contextualised Word Family Model, which includes integration, repetition, and meaningful use (Nagy, 1988), is more effective in providing students with a richer word knowledge. This approach is also consistent with the idea that observing and paying attention to second language features is critical to learning a new language (Karami & Bowles, 2019). Hadi (2017) suggests that presenting semantically related words as a "central concept" is the best method to teach vocabulary. Tahir et al. (2021) also found that the explicit method is effective in helping learners acquire new words. However, further research is needed to support and validate these findings, as Curtis (1987) suggests that methods may vary in their effectiveness for different groups of students. Therefore, more studies are necessary to determine the consistency of these findings and their generalizability to different groups of learners.

The findings of this study have significant pedagogical implications for English as a Second Language (ESL) classrooms in Malaysia. Despite individual differences, the use

of the Contextualised Word Family model can benefit all learners in vocabulary acquisition (Subon, 2016). However, teachers should also take into consideration the specific problems faced by students in vocabulary learning and provide explicit instruction on appropriate words (Afzal, 2019). It is crucial to prioritise increasing students' vocabulary size, as it is fundamental to acquiring the English language (Haris & Yunus, 2018). Given that most students in this study had a vocabulary size below the minimum of 2000 words, teachers should aim to accelerate their vocabulary growth. Finally, effective vocabulary instruction should not only focus on learning individual words but also on learning word families, grammar, syntax, and contexts (Nation, 2001). This integrated approach to vocabulary learning will provide richer word knowledge and improve overall language proficiency.

Conclusion

This study investigated the influence of individual differences, such as gender, attitudes, and perceived problems faced in vocabulary learning on L2 learners' vocabulary acquisition using the Contextualised Word Family model. This rich, structured, and systematic model of explicit vocabulary instruction can be adopted for vocabulary acquisition. The findings revealed that these factors did not significantly affect learners' vocabulary acquisition, although some weak positive correlations were identified between learners' vocabulary size and their perceptions of problems faced in vocabulary learning. However, the explicit vocabulary instruction model used in the study resulted in promising growth in students' vocabulary size, although most students still had a vocabulary size below the 2000-word level. As a result, the study recommends the implementation of a Vocabulary Intervention using the Contextualised Word Family model, which could help students gain 400 new words a year and over 2000 words throughout their secondary school education. Considering the study's limitations, such as a small sample size and limited variables, it is suggested that future studies should employ a mixed-methods research design to obtain a more in-depth understanding of the factors that influence L2 learners' vocabulary acquisition and improve the effectiveness of vocabulary instruction.

Acknowledgement

We would like to express our heartiest gratitude to all parties who had participated in this research – the Form 2 students and English teachers at the selected school in Samarahan Division, East Malaysia.

References

Adolps, S., & Schmitt, N. (2003). Lexical coverage of spoken discourse. *Applied Linguistics*, 24(4), 425-438. <https://doi.org/10.1093/applin/24.4.425>

- Afzal, N. (2019). A Study on vocabulary learning problems encountered by BA English majors at the university level of education. *Arab World English Journal*, 10(3) 81-98. <https://dx.doi.org/10.24093/awej/vol10no3.6>
- Ahmadi, S. R. M. (2017). The impact of incidental and intentional L2 vocabulary learning on depths and breadth dimensions of vocabulary knowledge. *The Buckingham Journal of Language and Linguistics*, 10, 1-17. <https://doi.org/10.5750/bjll.v10i0.1270>
- Alhamami, M. (2022). Language learners' attitudes toward online and face-to-face language environments. *Front Psychol*, 13, 1-12. <https://doi.org/10.3389/fpsyg.2022.926310>
- Al-Khasawneh, F. (2019). The impact of vocabulary knowledge on the reading comprehension of Saudi EFL learners. *Journal of Language and Education*, 5(3), 24-34. <https://doi.org/10.17323/jle.2019.8822>.
- Bai, Y. (2020). The relationship of test takers' learning motivation, attitudes towards the actual test use, and test performance of the college English test in China. *Lang Test Asia*, 10, 1-18. <https://doi.org/10.1186/s40468-020-00108-z>
- Beck, I. L., McKeown, M. G., & Kucan, L. (2002). *Bringing words to life: Robust vocabulary instruction*. Guilford Press.
- Blachowicz, C. L. Z. (2005). *Vocabulary essentials: From research to practice for improved instruction*. Scott Foresman and Co.
- Blachowicz, C. L. Z., & Fisher, P. (2000). Vocabulary instruction. In M. L. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (pp. 503-523). Lawrence Erlbaum Associates.
- Blachowicz, C. L. Z., Fisher, P. J. L., Ogle, D., & Watts-Taffe, S. (2006). Vocabulary: Questions from the classroom. *Reading Research Quarterly*, 41, 524-539. <https://doi.org/10.1598/RRQ.41.4.5>
- Chan, C. H., & Aziz, A. A. (2021). Employment of language learning strategies by Chinese school learners in learning ESL vocabulary. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, 6(3), 330-339. <https://doi.org/10.47405/mjssh.v6i3.707>.
- Chung, S. F. (2012). Research-based vocabulary instruction for English language learners. *Reading Matrix: An International Online Journal*, 12(2), 105-120. https://www.readingmatrix.com/articles/september_2012/chung.pdf
- Curtis, M. E. (1987). Vocabulary testing and vocabulary instruction. In M. G. McKeown & M. E. Curtis (Eds.), *The nature of vocabulary acquisition* (pp. 37-52). Erlbaum.
- Dörnyei, Z. (2006). Individual differences in second language acquisition. *AILA Review*, 19(1), 42-68. <https://doi.org/10.1075/aila.19.05dor>
- Freyer, D. A., Frederick, W. C., & Kalasmeier, H. J. (1969). *A schema for testing the level of concept mastery*. Technical Report No. 16. University of Wisconsin Research and Development Centre for Cognitive Learning.

- Gardner, R. C., & MacIntyre, P. D. (1992). A student's contribution to second-language learning. Part I: Cognitive variables. *Language Teaching*, 25, 211-220. <https://doi.org/10.1017/S026144480000700X>
- Graves, M. F. (2000). A vocabulary programme to compliment and bolster a middle grade comprehension programme. In B. M. Taylor, M. F. Graves, & P. van den Broek (Eds.), *Reading for meaning: Fostering comprehension in the middle grades* (pp.116-135). International Reading Association.
- Gu, P. Y. (2003). Vocabulary learning in a second language: Person, task, context and strategies. *TESL-EJ Journal*, 7, 1-25. <http://www-writing.berkeley.edu/TESL-EJ/ej26/a4.html#top>
- Hadi, A. S. A. (2017). Significance of vocabulary in achieving efficient learning. *American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS)*. 29(1), 271-285. <http://asrjetsjournal.org>
- Halvaei, M., & Ansarin, A. (2018). Learner effectiveness: A cause of learner strategy use? *International Journal of Education and Literacy Studies*, 6(4), 1-6. <https://doi.org/10.7575/aiac.ijels.v.6n.4p.1>
- Haris, M., & Yunus, M. M. (2018). Vocabulary size of ESL IGCSE students. *International Journal of Advanced Research (IJAR)*, 6(8), 263-267. <http://dx.doi.org/10.21474/IJAR01/7518>
- Hunt, A., & Beglar, D. (1998). Current research and practice in teaching vocabulary. *JALT*, 22(1), 7-11. <https://jalt-publications.org/tlt/articles/1914-current-research-and-practice-teaching-vocabulary>
- Irvin, S., & Blankenship, K. G. (2022). Vocabulary & academic success in university undergraduate students. *Teaching and Learning in Communication Sciences & Disorders*, 6(2), 10-18. <https://doi.org/10.30707/TLCSD6.2.1660595992.600476>
- Karami, A., & Bowles, F. A. (2019). Which strategy promotes retention? Intentional vocabulary learning, incidental vocabulary learning, or a mixture of both? *Australian Journal of Teacher Education*, 44(9), 25-43. <http://dx.doi.org/10.14221/ajte.2019v44.n9.2>
- Kidd, E., Donnelly, S. & Christiansen, M. H. (2018). Individual differences in language acquisition and processing. *Trends in Cognitive Sciences*, 22(2), 154-169. <https://doi.org/10.1016/j.tics.2017.11.006>.
- Laufer, B. & Nation, I. S. P. (1999). A vocabulary size test of controlled productive ability. *Language Testing* 16(1), 33-51. <https://doi.org/10.1191/026553299672614616>
- Lee, B. C., Pandian, A., Rethinasamy, S., & Tan, D. A. L. (2019). Effects of PWIM in the ESL classroom: Vocabulary knowledge development among primary Malaysian learners. *3L: Language, Linguistics, Literature*, 25(4), 179-197. <http://ejournals.ukm.my/3l/issue/view/1230>
- Lee, S., & Pulido, D. (2017). The impact of topic interest, L2 proficiency, and gender on EFL incidental vocabulary acquisition through reading. *Language Teaching Research*, 21, 118-135. <https://doi.org/10.1177/1362168816637381>

- Lee, S. (2020). Examining the roles of aptitude, motivation, strategy use, language processing experience, and gender in the development of the breadth and depth of EFL learners' vocabulary knowledge. *SAGE Open*, 10(4), 1-15. <https://doi.org/10.1177/2158244020977883>
- Li, S., Hiver, P., & Papi, M. (2022). *The Routledge handbook of second language acquisition and individual differences* (1st ed.). Routledge. <https://doi.org/10.4324/9781003270546>
- Linda, A., & Shah, P. M. (2020). Vocabulary acquisition style in the ESL classroom: A survey on the use of vocabulary learning strategies by the primary 3 learners. *Creative Education*, 11, 1973-1987. <https://doi.org/10.4236/ce.2020.1110144>
- Llach, M. P. A., & Gallego, M. T. (2012). Vocabulary knowledge development and gender differences in a second language. *ELIA: Estudios De Lingüística Inglesa Aplicada*, 12, 45-75.
- Mckeown, M. G., & Beck, I. L. (2011). Making vocabulary interventions engaging and effective. In R. E. O'Connor & P. F. Vadasy (Eds.), *Handbook of reading interventions* (pp. 138-168). Guilford Press.
- Ming, W. (2007). An examination of vocabulary learning of college-level learners of English in China. *The Asian Journal*, 9(2), 93-114. <https://www.asian-efl-journal.com/main-editions-new/an-examination-of-vocabulary-learning-of-college-level-learners-of-english-in-china/index.htm>
- Mohseni-Far, M. (2007). Techniques and strategies utilized for vocabulary acquisition: The necessity to design a multifaceted framework with an instructionally wise equilibrium. *Porta Linguarum*, 8, 137-152. https://www.ugr.es/~portalin/articulos/PL_numero8/8-MOHAMMAD.pdf
- Mutua, J., & Oyoo, S. (2020). Gender differences in learning strategies and academic achievement among form three secondary school students in Nairobi County, Kenya. *International Journal of Applied Psychology*, 10(1), 1-7. <http://kerd.ku.ac.ke/123456789/327>
- Nagy, W. E. (1988). *Teaching vocabulary to improve reading comprehension*. International Reading Association.
- Nation, I. S. P. (1990). *Teaching and learning vocabulary*. Heinle & Heinle Publishers.
- Nation, P. (2001). *Learning vocabulary in another language*. Cambridge University Press.
- Nemati, A. (2010). Proficiency and size of receptive vocabulary: Comparing EFL and ESL environments. *International Journal of Educational Research and Technology*, 1(1), 46-53. <https://soeagra.com/ijert/vol1/ijert6.pdf>
- Qian, D. D., & Lin, L. H. F. (2020). The relationship between vocabulary knowledge and language proficiency. In S. Webb (Ed.), *The Routledge handbook of vocabulary studies* (pp. 66-80). Taylor & Francis.
- Schmitt, N. (2010). *Researching vocabulary: A vocabulary research manual*. Palgrave Macmillan.
- Schmitt, N. (2008). *Teaching vocabulary*. Pearson Education.
- Schmitt, N. (2000). *Vocabulary in language teaching*. Cambridge University Press.

- Schmitt, N., & Meara, P. (1997). Researching vocabulary through a word knowledge framework: Word associations and verbal suffixes. *Studies in Second Language Acquisition*, 19(1), 17-36. <https://doi.org/10.1017/S0272263197001022>
- Sheehan, A. (2004). *Making sense of words*. Bureau of Educational and Cultural Affairs, Office of English Language Programs. <http://forum.state.gov/vols/vol42/no1/p02.htm>
- Silsüpür, B. (2017). Does using language games affect vocabulary learning in EFL Classes? *Journal of Foreign Language Education and Technology*, 2(1), 83-104. <https://www.jflet.com/articles/does-using-language-games-affect-vocabulary-learning-in-efl-classes.pdf>
- Subon, F. (2016). Direct vocabulary instruction: The effects of contextualised word families on learners' vocabulary acquisition. *Procedia - Social and Behavioral Sciences*, 224, 284-291. <https://doi.org/10.1016/j.sbspro.2016.05.461>
- Subon, F. (2017). *Direct vocabulary instruction: The effects of contextualised word families on students' vocabulary acquisition* [Doctoral dissertation, Universiti Teknologi MARA].
- Subon, F. (2018). The contextualized word family model of direct vocabulary instruction. *IOSR Journal of Humanities and Social Science*, 23, 57-70. <https://doi.org/10.9790/0837-2303035770>
- Sulaiman, N. A., Salehuddin, K., & Khairuddin, R. (2018). Academic word list knowledge of Malaysian ESL undergraduates. *GEMA Online® Journal of Language Studies*, 18(4), 1-14. <http://doi.org/10.17576/gema-2018-1804-01>
- Tahir, M. H. M., Albakri, I. S. M. A., Adnan, A. H. M., & Karim, A. R. (2020). The effects of explicit vocabulary instructions on secondary ESL students' vocabulary learning. *3L: Language, Linguistics, Literature*, 26(2). <http://journalarticle.ukm.my/15156/>
- Tahir, M. H. M., Shah, D. S. M., Shak, M. S. Y., Albakri, I. S. M. A., & Adnan, A. H. M. (2021). Explicit vocabulary instruction: Effects of vocabulary learning on Form Two ESL learners. *Studies in English Language and Education*, 8(3), 1227-1247. <https://doi.org/10.24815/siele.v8i3.19539>
- Thompson, A. S. (2021). Attitudes and beliefs. In T. Gregersen & S. Mercer (Ed.), *The Routledge handbook of the psychology of language learning and teaching* (pp. 149-160). Routledge. <https://doi.org/10.4324/9780429321498>
- Viera, R. T. (2017). Vocabulary knowledge in the production of written texts: A case study on EFL language learners. *Technological Magazine - ESPOL*, 30(3), 89-105. <http://www.rte.espol.edu.ec/index.php/tecnologica/article/view/628>
- Walker, N., Monaghan, P., Schoetensack, C., & Rebuschat, P. (2020). Distinctions in the acquisition of vocabulary and grammar: An individual differences approach. *Language Learning*, 70(S2), 221-254. <https://doi.org/10.1111/lang.12395>
- Webb, S., Yanagisawa, A., & Uchihara, T. (2020). How effective are intentional vocabulary-learning activities? A meta-analysis. *The Modern Language Journal*, 104(4), 715-738. <https://doi.org/10.1111/modl.12671>

- Wilson, R. (2000). *A summary of Stephen Krashen's "principles and practice in second language acquisition"*. SCIRBD. <https://www.scribd.com/document/333908817/Krashen-s-Second-Language-Acquisition-Theory-summary-docx>
- Wong, A. S. C., Lee, J. Y. V., Fung, M., & Willibrord, O. (2019). Vocabulary size of Malaysian secondary school students. *International Journal of Modern Languages and Applied Linguistics*, 3(4), 27-34. <https://doi.org/10.24191/ijmal.v3i2.7364>
- Yousefi, M. H., & Biria, R. (2018). The effectiveness of L2 vocabulary instruction: A meta-analysis. *Asian-Pacific Journal of Second and Foreign Language Education*, 3(21), 1-19. <https://doi.org/10.1186/s40862-018-0062-2>
- Zimmerman, K. (2005). Newly placed versus continuing students: Comparing vocabulary size. *ESL Reporter*, 38(1), 52-60. <http://ojsdev.byuh.edu/index.php/Issue1/article/download/1248/1198>