Explicit Teaching of Vocabulary through Word-knowledge Strategies: An Experimental Study

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Abstract

Vocabulary knowledge is crucial for language acquisition, as unfamiliar words encountered during reading can impede comprehension. Many learners, particularly those who live in settings where their only opportunity to use the language is in the classroom struggle with this area of language learning. Teaching effective word-knowledge strategies, such as using context and analysing word parts, can empower students to learn new vocabulary autonomously and efficiently.

This study investigates the impact of explicit vocabulary instruction on 44 elementary-level Omani learners of English at the University of Technology and Applied Sciences-Ibra. The participants, aged 18 to 21, were divided into two groups of 22 students each, selected randomly from eight groups in the foundation programme.

A quasi-experimental design was employed, with an independent variable focusing on intentional vocabulary teaching and a dependent variable measuring vocabulary knowledge. Both groups underwent a pre-test to ensure equivalence, followed by two months of instruction. The experimental group received explicit vocabulary instruction, while the control group did not receive specific vocabulary learning guidance. At the end of the treatment period, both groups took a post-test to evaluate vocabulary knowledge improvement.

The analysis of pre-test and post-test scores revealed significant differences between the control and experimental groups, favouring the latter and the correlational analysis reveals the need for teaching vocabulary in contexts. The study concluded that explicit vocabulary instruction positively impacts students' vocabulary size and overall knowledge, highlighting the effectiveness of intentional teaching strategies in enhancing vocabulary acquisition.

Keywords: Vocabulary knowledge, intentional vocabulary, explicit vocabulary, word-learning strategies

1. Introduction

1.1 Vocabulary

Comprehensive vocabulary knowledge is a crucial element of communicative competence, playing a significant role in both understanding and expressing oneself in a second language (Coady & Hucking, 1997). Consequently, the learning of vocabulary leads to second language acquisition as vocabulary is innate to second language learning. Comprehension of vocabulary words contributes to improving reading comprehension and fostering reading fluency. According to Wilkins (1972), while grammar is crucial for communication, the absence of vocabulary renders our ability to convey any meaningful information.

1.2 Explicit Teaching of Vocabulary

The explicit teaching of vocabulary, as highlighted by Ellis (1994), encompasses a direct and intentional instructional approach where learners are consciously made aware of what they are acquiring. Furthermore, according to Hung (2015), deliberate and purposeful vocabulary learning expedites the lexical development of learners. This acceleration is attributed to focused repetition and memorisation strategies that can be efficiently carried out individually within a brief timeframe. Stahl and Fairbanks (1986) support this perspective by asserting that comprehending the meaning of a word through its usage in a sentence, along with providing its antonym and synonym, serves as evidence of a deeper level of cognitive processing.

1.3 Explicit Vocabulary Teaching Method

Intentional vocabulary teaching employs diverse strategies, involving the explicit instruction of key words through various methods. These approaches encompass teaching synonyms and antonyms, exploring word parts, emphasising word collocations, encouraging guessing, and facilitating the creation of definitions using everyday language that resonates with the students' understanding.

Choice of Technique: Word-knowledge Strategies

Strategies are many to teach vocabulary but using certain techniques is a strategy to vocabulary learning that affects competency levels in foreign languages, claims Farhady (2006). Put simply, the application of techniques effectively results in improved performance in

particular language abilities or subskills.

1.4 Word-knowledge Strategies Help Learners Acquire Vocabulary Explicitly.

1.4.1 Synonyms

A synonym is a word that shares either an identical or a nearly identical meaning with another word. For example, 'big' is a synonym for 'large,' and 'begin' is synonymous with 'start' or 'commence.' The use of synonyms serves to alleviate monotony and avoid repetitive use of specific words. Furthermore, synonyms empower learners to articulate the same idea through various expressions.

1.4.2 Memorisation

Memorisation involves linking a word in the native language with its equivalent in the second or foreign language until it is committed to memory. It is deemed an effective method for vocabulary acquisition. As individuals mature, they typically develop personalized memorisation techniques. This approach necessitates substantial repetition and cognitive processing, contributing to enhanced retention over time.

1.4.3 Guessing

Inferring, the process of guessing the meanings of words from context plays a vital role in understanding the passage. It relies on available evidence. Inferring meanings from context proves to be more challenging than initially perceived, primarily relying on our familiarity with words that pose no difficulty when encountered.

1.4.4 Word Parts

Learners are encouraged to possess decoding skills and the capability to identify different components of words, including roots, prefixes, and/or suffixes. This proficiency enhances word recognition, consequently leading to an expansion of vocabulary size and an improvement in reading comprehension.

In the initial step, learners utilise flashcards to recognise the specific part of a word. Subsequently, they enhance their understanding by illustrating the meaning of the identified word part through drawings. The task concludes with learners providing definitions for the word parts they have studied. Finally, to reinforce their learning, learners construct sentences incorporating longer words that contain a root, prefix(es), and/or suffix(es). Formative assessments, in the form of quizzes, are employed to gauge the progress of learners in mastering these concepts.

It is essential for students to acquire the skill of breaking longer words into smaller components. This proficiency in understanding word parts aids learners in recognising words, comprehending their meanings, and decoding words swiftly and accurately.

1.5 Significance of Teaching Word-knowledge Strategies

Teaching students strategies for word knowledge, including synonyms, contextual guessing, memorisation, and understanding word parts, is paramount. These strategies are instrumental in unlocking the meanings of unfamiliar words, thereby enhancing students' vocabulary acquisition.

Hence, the study’s objective was to examine the influence of intentionally teaching vocabulary through the implementation of specific word-knowledge strategies on 44 elementary Omani learners. The subjects are students of English as a foreign language at the University of Technology and Applied Sciences-Ibra.

2. Literature Review

Vocabulary knowledge is integral to language learning as it is vital in language use and communicative competence. Without a substantial vocabulary, students face difficulties in both communication and language learning, hindering their ability to effectively express themselves or grasp a new language.

Way back, Coady and Huckin (1997) argued that the development of vocabulary skills is crucial for language learners, as it is a fundamental requirement for using the language effectively.

The National Reading Panel (2000) emphasised the importance of explicit vocabulary teaching for comprehending specific texts. The panel highlighted the necessity for students to encounter vocabulary items multiple times, including not only technical terms but also words found in various contexts. Effective vocabulary learning, according to the panel, involves exposure to words in rich contexts, with tasks structured to be engaging for students. In addition, Brown (2000) declares that explicit learning of vocabulary involves a conscious and intentional process where the learner is aware of the learning activity and possesses the intention to acquire new vocabulary.

Blachowicz and Fisher (2000), Graves (2016), Baumann et al. (2003), and the National Institute of Child Health and Human Development (NICHD, 2000) collectively emphasize that employing word-knowledge strategies is instrumental in helping students understand the meanings of unknown words and expanding their vocabulary knowledge. Intentional teaching of word-learning strategies plays a crucial role in fostering students' independence in learning new words. Marzban and Kamalian (2013) indicated that intentional vocabulary teaching involves the deliberate and conscious use of various teaching and learning strategies. Moreover, Dimas (2009) proposed that in explicit vocabulary learning, providing students with word lists is beneficial for augmenting their vocabulary size.

Most vocabulary studies have consistently suggested that a solid grasp of word meanings has a direct and significant impact on reading

comprehension. These studies propose that teaching word meanings, either briefly before or during reading a text, proves to be more effective in supporting comprehension than solely exposing students to the words through reading alone. Graves (2016) recommends comprehensive vocabulary programmes that encompass a rich linguistic environment, explicit instruction of word meanings, strategy teaching, and an increased focus on raising students' awareness of words.

Baumann (2009) highlights the challenges faced by many slow learners and low-achieving students from low-income households, particularly in the domain of reading. These students often struggle with extensive and independent reading, leading to a deficiency in vocabulary knowledge. Baumann suggests that intentional vocabulary learning interventions are crucial for these learners, as such strategies can significantly contribute to the expansion of their vocabulary. Also, Sénéchal (1997) indicated that repeated exposure to vocabulary through repeated readings improves the acquisition of vocabulary knowledge.

Moreover, Vasu and Dhanavel (2015) investigated the learners' attitudes toward vocabulary building and their preferences for sources of vocabulary learning. They emphasised the necessity of enhancing students' awareness regarding the significance of acquiring substantial vocabulary. Furthermore, Schmitt (2008) underscores the crucial role of vocabulary knowledge in second-language learning, highlighting that words convey the core meaning and transmit essential information. Consequently, it is crucial for students to actively participate in ongoing vocabulary development activities to attain sufficient vocabulary knowledge.

The study conducted by Sivardeen (2016) focused on young adult male students from Saudi Arabia who were at the elementary level in English language proficiency. The research utilised tests to assess the learners' partial vocabulary acquisition as they engaged in extensive reading, which included both simplified and unsimplified English materials, throughout an English course spanning one semester.

The results revealed statistically significant partial vocabulary gains following the extensive reading programme. However, the difference did not reach significance when considering the absolute number of words. The study concluded that relying solely on pure extensive reading might not be optimal for vocabulary learning. Instead, a modified approach, that incorporates explicit vocabulary instruction, alongside extensive reading, is recommended to enhance vocabulary acquisition. This approach helps learners build a solid foundation of language knowledge, leading to improved vocabulary retention.

The research conducted by Gilakjani and Sabouri (2016) explored effective reading strategies aimed at enhancing learners' reading comprehension proficiency. The results showed that reading techniques had an advantageous impact on students' reading comprehension skills. The study also found that reading materials should be created with students' attention spans in mind, making comprehension simple, and matching students' skill levels in mind.

Kumar and Dhanavel (2018) investigated the disparities in receptive and productive vocabulary, specifically focusing on word frequency levels and overall vocabulary size utilising the Receptive Vocabulary Levels Test (Schmitt et al., 2001) and the Productive Vocabulary Levels Test (Laufer and Nation, 1999). The findings revealed that the students demonstrated a higher level of knowledge in receptive word frequency compared to their productive word frequency. Additionally, their receptive vocabulary size surpassed their productive vocabulary size. To enhance learners' vocabulary proficiency and size, they suggest adopting an activity-based and explicit vocabulary teaching approach within the regular classroom setting.

The study conducted by Kamal (2019) examines whether reading comprehension contributes to the development of vocabulary knowledge in English as a Foreign Language (EFL) learners within the EFL classroom. The findings indicate that learners can enhance their vocabulary knowledge over time through reading comprehension, emphasising its effectiveness for lexical development. The researcher suggests that instructors should focus on teaching strategies that empower learners to acquire vocabulary independently and intentionally.

Moreover, Ramadhani (2020) investigated the correlation between reading comprehension and vocabulary size of the students and the study showed that there was an efficient relationship between the scores of the students in the vocabulary knowledge and reading comprehension. Furthermore, Wei (2020) explored the relationship between vocabulary knowledge of Chinese students and their reading comprehension. The results showed significant relationships between the vocabulary knowledge and reading comprehension particularly that the breadth of vocabulary knowledge correlated with and contributed more to reading comprehension than the depth of vocabulary knowledge.

Additionally, Zhang and Zhang (2022) investigated the correlation between second-language vocabulary knowledge and L2 reading/listening comprehension. The findings showed strong relationships between vocabulary knowledge and both reading and listening comprehension.

The students currently possess inadequate word knowledge, with a particularly weak grasp of vocabulary. This deficiency is attributed to the limited exposure and absence of opportunities for the usage of English. Consequently, the classroom becomes the sole environment for students to engage with and learn the English language.

Recognising the significance of explicit teaching, particularly in the realm of vocabulary, becomes crucial. Explicit teaching methods present an effective and efficient approach for students to acquire new words. Therefore, there is a need to explore the impact of intentional vocabulary instruction on English as a Foreign Language (EFL) learners at the University of Technology and Applied Sciences-Ibra.

3. Research Questions

The literature review provided valuable insights into the effectiveness of intentional vocabulary teaching, forming the basis for the following research questions:

1. To what extent does explicit teaching of vocabulary significantly increase the vocabulary size of students in the experimental group?
2. How effective does the level of improvement show the relationship between word strategy components and vocabulary?

4. Methodology

The objective of this study is to assess the influence of explicit vocabulary teaching on English as a Foreign Language (EFL) learners at the University of Technology and Applied Sciences-Ibra. The study also intends to investigate the degree of correlation between students' vocabulary knowledge and the specific word learning strategies they employ. It examines strategies such as contextual guessing, synonyms, and word parts, aiming to determine which techniques work best for improving vocabulary learning.

The research involved the selection of one treatment group and one control group. Both groups underwent pre-tests and post-tests in vocabulary. Intentional vocabulary instruction was imparted only to the treatment group. The control group received instruction through a conventionally accepted teaching method. The aim was to investigate whether intentional vocabulary instruction has a measurable impact on increasing students' vocabulary size.

4.1 Participants

The participants of the study were male and female students enrolled in the first level of the foundation programme at the University of Technology and Applied Sciences-Ibra. Selection was based on the results of the English placement test, ensuring a relatively uniform proficiency level in vocabulary knowledge among all level one students. The study sample comprised two groups, each consisting of 22 students, with ages ranging from 18 to 21 years. These two groups were randomly selected from a pool of eight groups, all of whom were engaged in the mandatory study of English as an essential requirement in the foundation programme.

4.2 Research Design

A quasi-experimental design was employed, with participants randomly selected from eight groups. The explicit teaching of vocabulary was the independent variable, whereas the students' vocabulary knowledge was the dependent variable. This design was chosen to examine the impact of intentional vocabulary instruction on the participants' vocabulary knowledge in relation to contextual guessing, synonyms, and word parts.

4.3 Data Collection Procedure

The study comprised two distinct groups, namely the experimental and control groups. To ensure initial comparability and homogeneity, both groups underwent a pre-test in vocabulary at the onset of the study. Subsequently, the experimental group received explicit vocabulary instruction, whereas the control group did not receive any specific vocabulary learning guidance. Both groups were engaged in instruction for two months. At the conclusion of the treatment, a uniform post-test in vocabulary was administered to both groups to assess the impact of the intervention on the participants' vocabulary size.

5. Results

RQ1: To what extent does explicit teaching of vocabulary significantly increase the vocabulary size of students in the experimental group?

The researcher employed the t-Test for the analysis and compared the mean scores of the pre-tests conducted to measure the entry level of vocabulary knowledge of both the intervention and non-intervention groups. Additionally, the t-Test was used to compare the mean scores of the post-tests conducted for each group to measure the exit level of vocabulary knowledge. Both the independent samples and paired samples variations of the statistical analysis method showed the outcome in favour of the group which received the intervention.

Table 1. Outcomes of the tests

Dependent t-test		
	Pre-test C	Post-test C
Mean	4.14	3.11
±SD	2.15	1.78
P-value	0.0 1	
Significance	S	

Table 1 reveals a noteworthy distinction between pre-test and post-test scores in Group C. The mean value for the pre-test was 4.14 ± 2.15, whereas for the post-test, it was 3.11 ± 1.78. This indicates statistical significance with a corresponding P-value of 0.01.

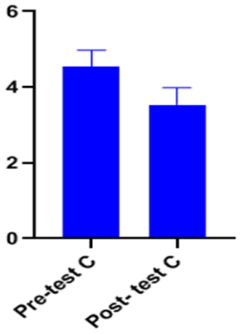

Figure 1. Pre-Test vs. Post-Test Scores in Group C

Table 2. Comparison of Pre-Test and Post-Test Scores in Group E

Dependent t-test		
	Pre-test E	Post-test E
Mean	5.4	6.59
±SD	2.15	1.27
P-value	0.02	
Significance	S	

According to the findings presented in Table 2, a significant disparity exists between pre-test and post-test scores in Group E. The mean value for the pre-test was 5.4 ± 2.15, while for the post-test, it was 6.59 ± 1.27. A corresponding P-value of 0.02 indicates statistical significance.

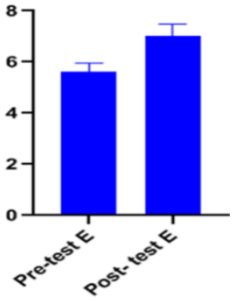

Figure 2. Pre-Test vs. Post-Test Scores in Group E

Table 3. Comparison of Pre-Test Scores between Control and Experimental Groups

Independent t-test	Pretest	
	Control	Experimental
Mean	4.14	3.11
±SD	2.15	1.78
P-value	0.1	
Significance	NS	

Table 3 shows no significant difference between the pre-tests of the control group and the group which received treatment. The mean value for the pre-tests of the control group was 4.14 ±2.15, while the mean value for the experimental group was 3.11 ±1.78. The corresponding P-value was 0.1, suggesting that there is no statistically significant distinction between the two groups at the pre-test stage.

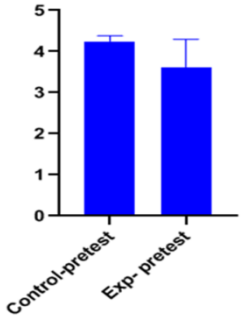

Figure 3. Pre-Test Score Comparison between Control and Experimental Groups

Table 4. Significant Difference in Post-Test Scores between Control and Experimental Groups

Independent t-test	Post-test	
	Control	Experimental
Mean	3.11	1.78
±SD	6.59	1.27
P-value	<0.01	
Significance	S	

The findings presented in Table 4 reveal a highly significant difference between the control post-test group and the experimental post-test group. The mean value for the control post-test group was 3.11 ±1.78, whereas for the experimental post-test group, it was 6.59 ±1.27. The P-value of <0.01 indicates a strong statistical significance.

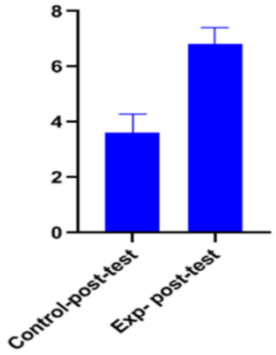

Figure 4. Post-Test Score Comparison: Control vs. Experimental Groups

Correlations Analysis

RQ2: How effective does the level of improvement show the relationship between word strategy components and vocabulary?

The analysis of correlation for all the three teaching techniques of Word-Knowledge Strategies followed to find the impact of Word-Knowledge Strategies on the improvement of students' vocabulary.

Correlations

		PRETEST_SCORE	POSTTEST_SCORE
PRETEST_SCORE	Pearson Correlation	1	.295
	Sig. (2-tailed)		.052
	N	44	44
POSTTEST_SCORE	Pearson Correlation	.295	1
	Sig. (2-tailed)	.052	
	N	44	44

Figure 5. Correlation of synonyms and test scores

Correlations

		PRETEST_SCORE	POSTTEST_SCORE
PRETEST_SCORE	Pearson Correlation	1	.380*
	Sig. (2-tailed)		.011
	N	44	44
POSTTEST_SCORE	Pearson Correlation	.380*	1
	Sig. (2-tailed)	.011	
	N	44	44

*. Correlation is significant at the 0.05 level (2-tailed).

Figure 6. Correlation of Contextual Guessing and test scores

Correlations

		PRETEST_SCORE	POSTTEST_SCORE
PRETEST_SCORE	Pearson Correlation	1	.056
	Sig. (2-tailed)		.720
	N	44	44
POSTTEST_SCORE	Pearson Correlation	.056	1
	Sig. (2-tailed)	.720	
	N	44	44

Figure 7. Correlation of Word Parts and Test scores

Figures 1, 2, and 3 display the correlation between various vocabulary learning techniques and test scores. The Pearson correlation values for the three techniques are ordered as follows: 0.380 > 0.295 > 0.056. Therefore, learners performed significantly better with contextual guessing, followed by synonyms, and then word parts.

6. Discussion

In order to assess the mean differences between the entry-level measurement of vocabulary knowledge (pre-test) and the exit-level measurement of vocabulary knowledge (post-test) within each group, statistical analysis was conducted on the pre- and post-test data. The outcomes for the control and experimental groups were found to differ significantly, with the experimental group exhibiting better results. This suggests that explicit vocabulary instruction had a positive impact on students' vocabulary size and improved their overall vocabulary knowledge, providing evidence in favour of the effectiveness of explicit vocabulary teaching.

Furthermore, correlation analysis was conducted for the three techniques—synonyms, contextual guessing, and word parts—to compare the control group, which received traditional instruction, with the experimental group. The contextual guessing technique showed a high correlation with a score of 0.380, compared to 0.295 for synonyms and 0.056 for word parts. The higher value for the contextual guessing technique indicates a more significant improvement compared to the other two techniques.

The results of this investigation are consistent with the findings mentioned above, which emphasize the value of explicit vocabulary instruction in language learning. The significant progress observed in the experimental group highlights the efficacy of deliberate teaching techniques in improving vocabulary acquisition. Learners were found to benefit significantly from the application of word-knowledge strategies, including contextual guessing, synonyms, and word parts. These techniques facilitated a higher degree of cognitive processing, thus enhancing vocabulary and comprehension.

7. Conclusion

To assess the effectiveness of the vocabulary development strategies employed in both groups, a post-test was administered and analysed using Levene's test. As indicated by the tables, there is a notable difference between the pre-test and post-test outcomes across the groups. The experimental group achieved a higher mean score of 6.591, while the control group exhibited a significantly lower mean score of 3.119.

The significant disparities in vocabulary knowledge between the control and experimental groups favour the experimental group, providing evidence that explicit vocabulary instruction enhances students' vocabulary size and overall knowledge. The results highlight the value of providing students with clear vocabulary instruction and adequate time for mastering vocabulary learning techniques.

Intentional vocabulary instruction, including strategies such as contextual guessing, memorisation, synonyms, and word parts, improves students' vocabulary and comprehension and significantly the contextual guessing contributes to the growth of more vocabulary. Recognising the association through correlational analysis might help educators understand how to modify various teaching strategies to maximise students' vocabulary growth and overall language proficiency. The study suggests designing instructional materials to empower students and foster autonomy in their learning process. Additionally, incorporating targeted vocabulary instruction into language learning programmes is crucial for improving students' overall language proficiency.

8. Limitations

The researcher chose subjects with whom he direct contact so as to increase ease of communication and to better explain ethics and consent within the study. The students were enrolled in his classes by a university registrar based on exam results and with an aim to balance genders. No other factors were considered when distributing these students into classes. The researcher recognizes the number of students as a limitation. This research should be repeated with a larger sample size to increase the ability to generalize the results. Additionally, the research is focused on the impact of vocabulary on reading comprehension. Further research should explore the effect of explicit vocabulary education focusing on collocations, synonyms, and antonyms on the acquisition and development of other skills as well as retention rates of lexical items.

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Authors' contributions

Elhafez Morsi has conceptualised, collected resources, analysed, and written the original draft. B. Sivakami is the corresponding author and supervisor. She edited, reviewed, and developed the final draft. All authors read and approved the final manuscript.

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The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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