The Use of Oxford's Memory Strategies to Improve Vocabulary Learning Among Eleventh Grade EFL Students in Oman

Ahmed Hamed Rashid Al Abri [1], Mohd Haniff Mohd Tahir[1] & Syahwil Saputra[1]

[1] Faculty of Languages and Communication, Sultan Idris Education Unversity, Tanjong Malim, Perak, Malaysia

Correspondence: Mohd Haniff Mohd Tahir, Faculty of Languages and Communication, Sultan Idris Education Unversity, Tanjong Malim, Perak, 35900, Malaysia. E-mail: haniff.tahir@fbk.upsi.edu.my

Abstract

Omani students must acquire English vocabulary to achieve educational qualifications and effectively communicate with English-speaking individuals, as vocabulary plays a crucial part in studying a foreign language and achieving academic success. Omani eleventh-grade students require assistance in employing effective ways for acquiring and retaining English vocabulary. They struggle with word retrieval in both spoken and written language. This study investigates the memory strategies utilised, preferred strategies, and influencing factors among eleventh grade EFL students in Oman. This study utilises an explanatory sequential mixed methods methodology. Convenience sampling was used to involve 126 students in this study. The researcher gathered data through a questionnaire, a semi-structured interview, and an observation checklist. The questionnaire data is analysed by descriptive statistical analysis, which includes calculating the mean and standard deviation. Thematic analysis is utilised for analysing the semi-structured interview data, while observation analysis is carried out to assess the classroom observation checklist. The findings showed that the most utilised category of methods is reviewing well (x=3.99), followed by employing actions (x=3.07). Interviews reveal that students favour utilising movies, visual aids, gaming, or competitive activities while interacting with their peers and friends. Additionally, CML tactics are predominantly utilised by teachers in their classrooms. The study results would assist educators in developing their vocabulary teaching strategies more efficiently, resulting in increased advantages for students. The curriculum developers could create tasks that enhance language acquisition.

Keywords: Oxford's memory strategy, vocabulary learning, EFL students

1. Introduction

1.1 Introduce the Problem

Education in Oman, including English instruction, still largely adheres to the notion that knowledge consists of memorizable facts (Al-Mahrooqi, 2012). This perspective positions the teacher as the primary knowledge source in the learning process (Al-Issa & Al-Bulushi, 2010). While many students excel in memorizing teaching material, comprehension may lag, often requiring assistance (Uchihara & Harada, 2018). Contrary to the idea of knowledge as static facts, vocabulary acquisition is recognized as crucial in foreign language learning (Schmitt, 2019). Omani eleventh-grade students have been observed employing independent learning strategies to enhance their English proficiency, demonstrating successful engagement in various learning tasks, and utilizing diverse strategies to deepen their understanding.

In learning English vocabulary, learners often resort to rote memorization, associating English words with their native language equivalents, which can lead to confusion and misuse (Gairns & Redman, 1986). Historically, teaching methods prioritized grammatical structure, but the communicative approach, emerging in the 1970s, shifted focus to vocabulary acquisition for effective communication (Thornbury, 2002; Carter, 2012; Saputra et al., 2023). This shift underscores the importance of vocabulary in language learning and usage, as highlighted by scholars (Allen, 1983).

Oxford (2003) distinguishes memory strategies into Direct and Indirect categories, with Direct strategies encompassing memory, cognitive, and compensation strategies, while Indirect strategies include metacognitive, affective, and social approaches. The current study explores the impact of memory strategies, particularly those identified by Oxford (2003) on vocabulary learning among Omani eleventh-grade students. Specifically, the study aims to (1) assess the use of Oxford's memory strategies for learning English vocabulary among Omani eleventh-grade students; (2) identify students' preferences for these memory strategies; and (3) investigate factors influencing students' utilization of these strategies in vocabulary learning.

1.2 Research Questions

Based on the mentioned objectives, the study will attempt to find answers to the following questions:

1.To what extent the Oxford's memory strategies are used for learning English vocabulary by the Omani eleventh-grade students?

2.What is the student's preference for Oxford's memory strategies used for learning English vocabulary by Omani eleventh-grade

students?

3.What are the factors affecting the students' Oxford's vocabulary learning strategies used for learning English vocabulary by the Omani eleventh-grade students?

1.3 Theoretical Framework

The study builds on the Information Processing Model (IPM), focusing on Oxford model memory strategies for vocabulary learning. IPM delineates memory into sensory register, short-term, and long-term stages. Additionally, the Levels of Processing Model (LOP) is relevant, outlining three stages: surface, moderate, and deep levels. Surface processing relies on visual cues, moderate processing on phonemic aspects, and deep processing on meaningful understanding. Moreover, the study adopts Oxford's (2003) Language Learning Strategies (LLSs), specifically employing four categories: Creating Mental Linkages (CML), Applying Images and Sounds (AIS), Reviewing Well (RW), and Employing Actions (EA).
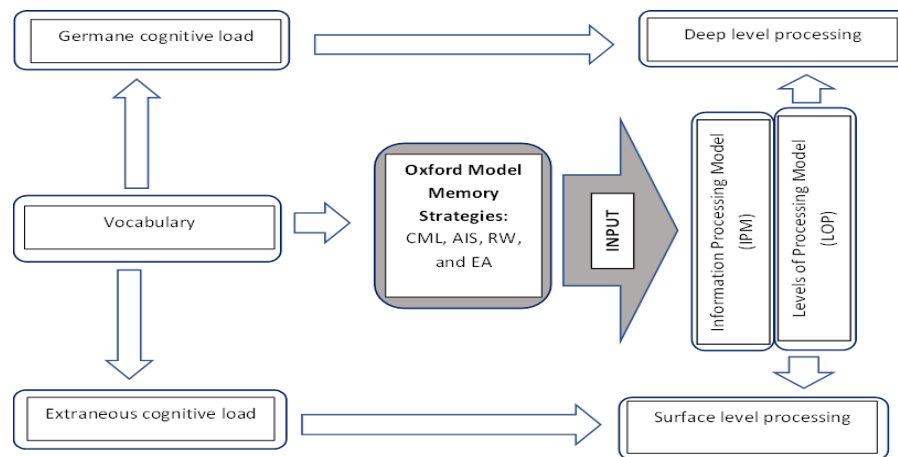

Figure 1. Theoretical Framework

2. Method

2.1 Research Design

The study investigates the memory strategies employed by Omani eleventh-grade students in learning English vocabulary, employing an explanatory sequential mixed methods design. This design integrates quantitative and qualitative approaches as proposed by Creswell (2012) to comprehensively understand research problems. The quantitative data precedes the qualitative data collection phase, allowing deeper insights into the research issue. The study employs questionnaire surveys (mean/standard deviation), semi-structured interviews (thematic coding), and observation checklists (checklist analysis) to explore memory strategies for vocabulary learning.

2.2 Participants

Convenience sampling was utilized to select participants, with 126 out of 190 male Grade 11 students included in the study. These students have studied English continuously from Grade 1 to Grade 11, ensuring sufficient language proficiency for participation. Ten students were selected for semi-structured interviews based on voluntary interest.

2.3 Research Instruments

Data was collected using a questionnaire, semi-structured interviews, and observation checklists. These instruments facilitated mixed methods data collection, combining qualitative and quantitative data for comprehensive analysis.

2.3.1 Questionnaires

A questionnaire based on Oxford's (2003) and Li's (2004) structures assesses memory strategies for English vocabulary learning. It includes demographic questions and items on memory strategies categorized into four types: Creating Mental Linkages (CML), Applying Images and Sounds (AIS), Reviewing Well (RW), and Employing Actions (EA).

2.3.2 Semi-structured Interviews

Semi-structured interviews gathered insights into students' usage of memory strategies for vocabulary learning, supporting data obtained from the questionnaire. Ten students voluntarily participated in the interviews.

2.3.3 Observation Checklist

An observation checklist identified indicators of memory strategies used for vocabulary acquisition, providing additional insights into preferred strategies.

2.4 Research Procedures

Ethical measures were followed, ensuring voluntary participation, informed consent, and confidentiality. Data collection tools were examined for ethical issues and linguistic suitability. Precautions were taken to ensure unbiased data collection from 16-year-old participants.

2.5 Data Analysis

Descriptive statistical analysis, using SPSS software, was employed to analyze questionnaire data for mean, standard deviation, percentages, and frequencies of memory strategy usage. SPSS was also used to ensure data reliability and internal consistency.

3. Results

3.1 Investigation of the First Research Question: What Memory Strategies Are Used for Learning English Vocabulary by the Omani Eleventh-Grade Students?

The first research question investigated the Omani eleventh-grade students' memory strategies for learning English vocabulary. The researcher used Exploratory Factor Analysis EFA and Principal Component Analysis PCA to discover the effectiveness of using memory strategies for learning English vocabulary. The scales are divided into domains, and each item is determined by the domain it belongs to. Sufficiency and suitability test of data KMO for the execution of factor of memory strategies used for learning English vocabulary shows that the data set was suitable to execute factor analysis. Table 1 indicates that the value of KMO is 0.66, which is more significant than 0.5. Similarly, the P value of Bartlett's test is less than 0.01, which indicates that this matrix does not represent the unity matrix. According to the analysis results, the researcher ensured that the conditions for using factor analysis were met.

Table 1. KMO and Barlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.66
Bartlett's Test of Sphericity	Approx. Chi-Square	720.23
	df	300
	Sig.	0

As seen in the Table 2 and the screen plot, the scale was evaluated to have four factors whose eigenvalues exceeded the value of 1 according to the Kaiser criterion. These factors explain together 50.02% of the total variance. The eigenvalue of the first factor is 5.53 and explains 22.12% of the total variance. The eigenvalue of the second factor is 2.87 and explains 11.46% of the total variance. The Eigenvalue of the third factor is 2.23, which explains 8.91% of the total variance, and the eigenvalue of the fourth factor is 1.88, which explains 7.51% of the total variance.

Table 2. Total Variance

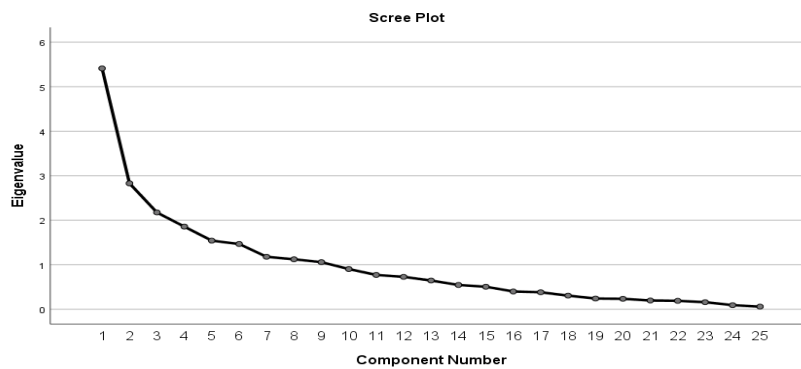| Component	Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	5.53	22.121	22.121
2	2.866	11.463	33.584
3	2.228	8.913	42.497
4	1.88	7.522	50.019

Figure 2. The Screen plot of the components in the questionnaire

The four-factor structure in this research was composed of 25 items. As is shown in Table 3, four items for factor one represents reviewing well (RW), nine items for factor two represent creating mental linkages (CML), four items for factor three represent applying images and sounds (AIS), and eight items for factor four represent employing actions (EA). Table 4 shows the four factors and the number of items in each factor. The extraction loading values of reviewing well (RW) items were ranged between (0.653- 0.877). The extraction loading values of creating mental linkage (CML) items ranged between (0.415- 0.735), while the extraction loading values of images and sounds (AIS) and employing actions (EA) items ranged between (0.509- 0.785) and (0.417- 0.690) respectively.

Table 3. Rotated Component Matrix

Items	Component			
	1	2	3	4
Question 22	0.877			
Question 21	0.738			
Question 5	0.666			
Question 4	0.653			
Question 20		0.735		
Question 24		0.622		
Question 10		0.617		
Question 25		0.585		
Question 6		0.564		
Question 12		0.553		
Question 19		0.496		
Question 13		0.458		
Question 15		0.415		
Question 8			0.785	
Question 11			0.682	
Question 2			0.593	
Question 14			0.509	
Question 23				0.453
Question 9				0.69
Question 1				0.652
Question 16				0.628
Question 7				0.553
Question 3				0.54
Question 17				0.482
Question 18				0.417

Table 4. Number of items in each factor

No.	Factor	Number of items
1	Reviewing well (RW)	4
2	Creating mental linkage (CML)	9
3	Applying images and sounds (AIS)	4
4	Employing actions (EA)	8
	Total number items	25

3.2 Investigation of the Second Research Question: What Is the Student's Preference for Memory Strategies for Learning English Vocabulary in Omani Eleventh-Grade Students?

The researcher used means and standard deviations to answer this question. The researcher used the weighted average interpretations of five-point Likert scale results to find descriptive statistics for the study variable. Likert scaling is a psychometric concept commonly used in survey research that uses guide questionnaires that collect responses on a scale (numbered from 1 to 5, with a descriptor for each number, from 'Seldom' to 'Always') the subjects or respondents of interest to participate. It is a widely used scale in many fields of discipline, particularly in social science research, such as education and psychology. It is a scaling method in which a statement can be responded positively or negatively. This scaling was invented by a psychologist named Rensis Likert in 1932, whose purpose was to look for an effective and efficient means of describing the attitudes of humans and the influences that affected them (Pimentel & Pimentel, 2019). (See Table 5).

Table 5. Weighted average for five-point Likert Scale

Weighted Average	Result
1-1.79	Never
1.80-2.59	Seldom
2.60-3.39	Sometimes
3.40-4.19	Usually
4.20-5	Always

Table 6 and Figure 7 indicate the mean values of four types of memory strategies. The dimension named Reviewing well (RW) obtained the highest mean value of x=parents which indicates that students are usually using the skill of Reviewing well (RW). It is followed by the dimension of Applying images and sounds (AIS) with the mean value of x=3.72. The results indicate that students usually use the skill of applying images and sounds. At the same time, the students are sometimes using the skills of Creating mental linkage (CML) and Employing actions (EA); the mean values of the two dimensions are x=3.15 and x=3.07 respectively. The following tables (Tables 7,8,9,10) and graphs (Figures 4,5,6,7) show the mean and standard deviation values of each component of variables under their four main dimensions: RW, AIS, CML, and EA.

Table 6. Means and standard deviations of the four types of strategies

Four main categories of memory strategies	N	Mean	Std. Deviation	Degree of use
Reviewing well (RW)	126	3.99	0.78	Usually
Applying images and sounds (AIS)	126	3.72	0.80	Usually
Creating mental linkage (CML)	126	3.15	0.67	Sometimes
Employing actions (EA)	126	3.07	0.69	Sometimes
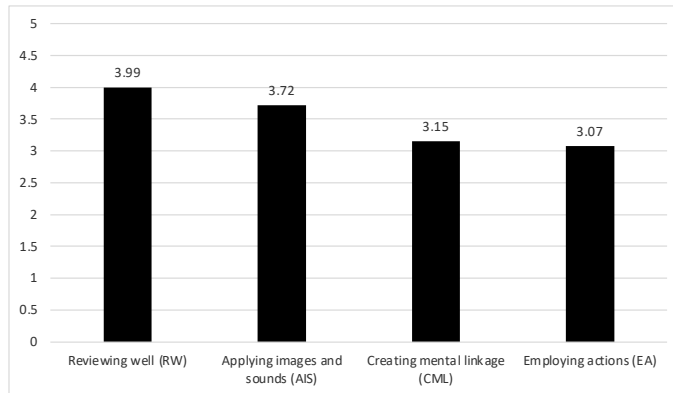
Figure 3. The mean values of the four types of memory strategies

Table 7. Means and standard deviations of Reviewing Well (RW)

Items	N	Mean	Std. Deviation	Degree of using
I write the new word on one side of a card and the definition on the other.	126	4.44	1.18	Usually,
I make vocabulary cards to help me remember and memorise words	126	3.97	1.21	Usually,
I make a regular and structured review of new words I have memorised	126	3.81	1.16	Always
I use semantic maps to enlarge vocabulary	126	3.75	1.32	Usually,
Reviewing well (RW)	126	3.99	0.78	Usually,

The results in Table 7 and Figure 4 indicate that the mean values of reviewing well (RW) and its items are relatively large, and they reached values ranging from (3.75 to 4.44). The item 'I write the new word on one side of a card and the definition on the other side "obtained the highest mean value of x=4.44, whereas item "I make vocabulary cards to help me remember and memorise words with the mean value of x=3.97). The statement "I use the semantic map to enlarge vocabulary" obtained the lowest mean value of x=3.75
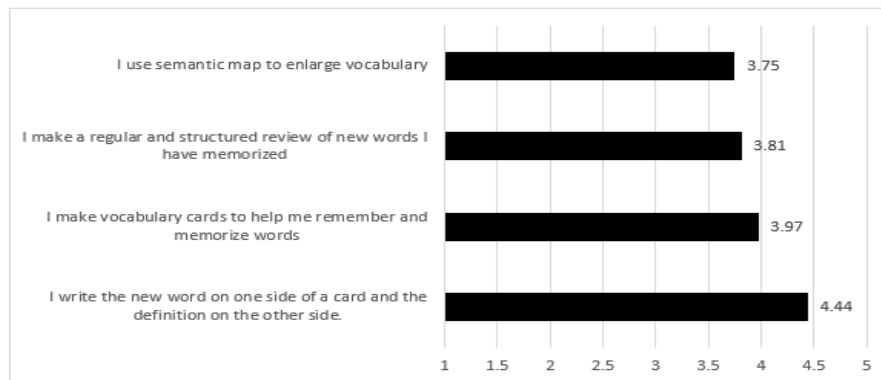

Figure 4. Means of the items in Reviewing Well (RW) category

The results in Table 8 and Figure 5 indicate that the mean values of Creating mental linkage (CML) and its items are fairly medium, and they reached values ranging from about (2.70 to 3.48). The item "When I meet a new word, I search in my memory and see if I have synonyms and antonyms in my memory stock" obtained the highest mean score of x=3.48, followed by the item "I memorise examples in context when using the words" with the mean score (x=3.40). The item "I try to use words correctly and efficiently after memorising them obtained the lowest mean score of x=2.70.

Table 8. Means and standard deviations of Creating Mental Linkages (CML)

| Items	N	Mean	Std. Deviation	Degree of using
When I meet a new word, I search in my memory and see if I have synonyms and antonyms in my memory stick.	126	3.48	1.29	Usually
I remember examples in context when using the words.	126	3.40	1.18	Usually
I link a word to personal experience.	126	3.38	1.36	Sometimes
I associate the word's sound with the same sound of a similar word in English.	126	3.31	1.38	Sometimes
I pay attention to phrases and collocations that go with words.	126	3.25	1.23	Sometimes
I review new words.	126	3.25	1.23	Sometimes
I guess the word meaning.	125	2.80	1.34	Sometimes
When I try memorising a word, I repeat it aloud.	126	2.79	1.49	Sometimes
I try to use words correctly and efficiently after memorising them.	126	2.70	1.19	Sometimes
Creating mental linkage (CML)	126	3.15	0.67	Sometimes
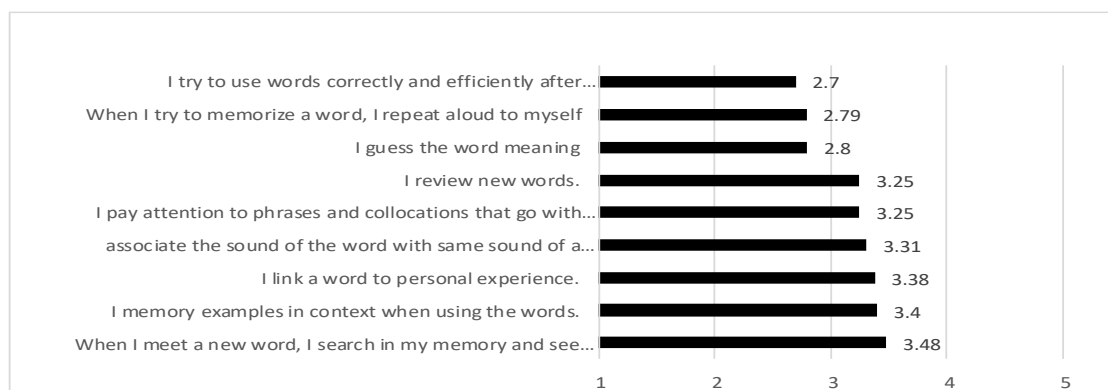
Figure 5. Means of the items in Creating Mental Linkages (CML)

The results in Table 9 and Figure 6 indicate that the mean values of Applying images and sounds (AIS) and its items are large, and they reached values ranging from (3.25 to 4.16). The item "I do oral spelling exercises with my friends whose English level is at a similar level to mine." obtained the highest mean score of x=4.16. It is followed by repeat writing words and their Arabic equivalents to remember them" (mean=3.82). The item "I remember a group of new words that share similar letters in spelling (e.g., big, bag, bug)." obtained the lowest mean score of x=3.2.

Table 9. Means and standard deviations of Applying Images and Sounds (AIS)

| Items	N	Mean	Std. Deviation	Degree of using
I do oral spelling exercises with my friends whose English level is like mine.	126	4.16	1.27	Usually
I repeat writing words and their Arabic equivalents to remember them.	126	3.82	1.22	Usually
I remember new words by a combination of pictures and sounds.	126	3.67	1.33	Usually
I remember a group of new words that share similar letters in spelling. (e.g., big, bag, bug).	126	3.25	1.27	Sometimes
Applying images and sounds (AIS)	126	3.72	0.80	Usually
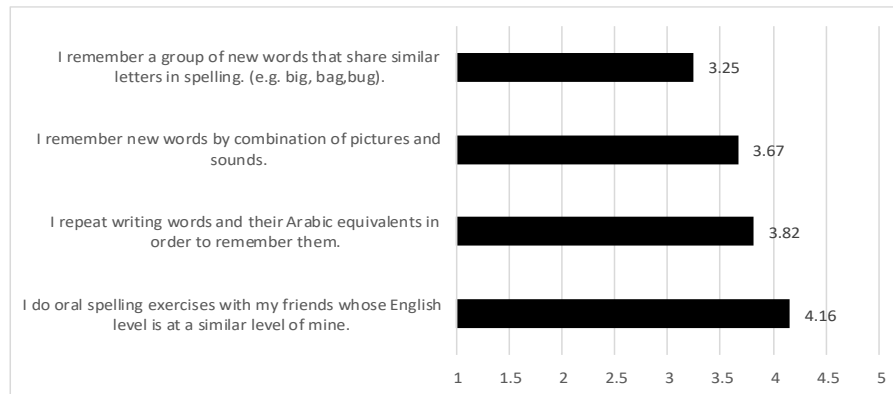
Figure 6. Means of the items in the Applying Images and Sounds (AIS) category

The results in Table 10 and Figure 7 indicate that the mean values of Employing Actions (EA) and most of its items fall into a relatively medium range of scores, and they scored values ranging from (2.53 to 3.70). The item "I group words into categories (e.g., animals, utensils, vegetables, etc.)." obtained the highest mean value of x=3.70, followed by the item "I keep the vocabulary list of new words that I make" with the mean score of x=3.37). The item "When I try to remember a word, I write repeatedly" obtained the lowest mean score of (seldom) x=2.53

Table 10. Means and standard deviations of Employing Actions (EA)

| Items	N	Mean	Std. Deviation	Degree of using
I group words into categories (e.g., animals, utensils, vegetables, etc.).	126	3.70	1.13	Usually,
I keep the vocabulary list of new words that I make.	126	3.37	1.16	Sometimes
I make a vocabulary list of new words that I meet.	126	3.36	1.03	Sometimes
I associate new words with the same sound in Arabic.	126	3.26	1.36	Sometimes
I repeat writing words and their Arabic equivalents to remember them.	126	2.86	1.37	Sometimes
I break the word into components (e.g., roots, prefixes).	126	2.79	1.41	Sometimes
I focus my attention on completing vocabulary exercises repeatedly before exams.	126	2.73	1.34	Sometimes
When I try to remember a word, I write repeatedly.	126	2.53	1.44	Seldom
Employing actions (EA)	126	3.07	0.69	Sometimes
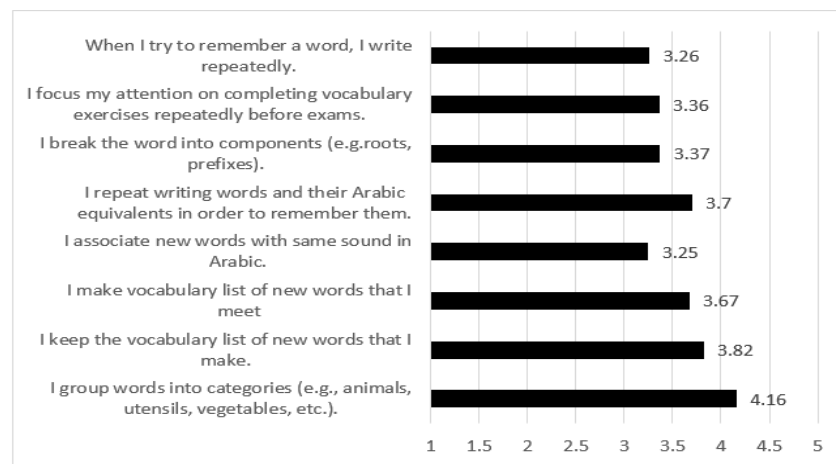
Figure 7. Means of the items in the Employing Actions (EA) category

4.4 Investigation of the Third Research Question

What other factors affect the students' vocabulary learning strategies used for learning English vocabulary by the Omani eleventh-grade students?

4.4.1 Findings from the Semi-Structured Students' Interview

To answer this question, as mentioned earlier, semi-structured interview questions were asked to ten students to find out more information that might not appear in the questionnaire. The answers were analysed to provide insight into using Oxford-model memory strategies to improve vocabulary learning among eleventh-grade students in Oman.

a. Do you think learning more new words makes you successful?

All the ten students answered, "Yes". The answer shows that students are motivated by the fact that English learning is vital for a better life; to master the English language, vocabulary is essential. The following answers are noteworthy:

"*When I learn new words, I can expand my knowledge and also practice the language easily*". (Student No. 2)

Some students said they could express themselves more, make language better, use language efficiently, and help talk better (Student Nos. 3, 7, 8, and 9, respectively). Another student said it gives more confidence (Student No.: 5). Two students said they can communicate well during travel to other countries. (Student No. 6 and 10)

The students could have gained this knowledge through several sources of information such as media, friends, or parents that English is necessary for international exposure and communication; even to use the internet better, English is necessary. This attitude can be a motivational factor for the students to learn vocabulary better and faster.

b. Is learning new words in English easy or difficult? Why?

Seven out of 10 students are positive and said that vocabulary learning is easy. Two students are very optimistic about learning vocabulary and said:

"*It is easy. Because now in our time, there are many resources that we can learn new words, such as the internet or otherwise*". (Student No. 2)

"*I think it is straightforward because if you make it exciting when you learn, you will be…it will be fun and beneficial in your learning English*". (Student No. 6)

Students (No. 4, 7 and 10) feel that vocabulary is easy to learn if the students take time and practice correctly. Some other students believe spelling is problematic, whereas learning vocabulary is easy. (Student No. 1,3,5,8 and 9). Although most of the students are positive, there is a need for effective vocabulary learning strategies that can solve their difficulties in learning vocabulary, especially spelling. Therefore, difficult spelling is a discouraging factor that affects vocabulary learning.

c. How do you usually learn new words? By guessing or using a dictionary, the internet, or other methods?

Out of 10 students, seven say they use the internet to learn words with other methods such as using a dictionary, guessing, watching videos, and discussing with friends. They find that internet-related sources make their vocabulary learning easier and faster.

"*Learn using a dictionary*". (Student No. 1 and 4)

"*Learn by guessing*". (Student No. 2 and 5).

"*First I guess the meaning, and then I check about it in the dictionary and listen to how to pronounce it*". (Student No. 3)

"*I use the internet because it is faster and easier*". (Student No. 7)

"*I listen to YouTube videos to learn a new word. Also, when I watch a film, I listen to the word, and I practice it with my friend*s". (Student No. 10)

"*All these methods are beneficial, but using a dictionary and the internet helps improve your English. Because of watching the video on the internet, maybe on YouTube. I just brainstormed in Google; You will find it very helpful.* (Student No. 6). As internet is rich with various features that help students to understand the meanings and other aspects of words by means of pictures, diagrams, audio files, videos, online dictionaries, even chatting or messaging etc., it becomes a naturally attractive platform for learning vocabulary.

d. To learn vocabulary, do you find aids such as pictures, videos, realia, etc. helpful? Explain.

All ten students replied, "Yes". They said it is easy and exciting to learn vocabulary with the help of these aids (Student 2). Therefore, students find vocabulary learning with the help of visual aids very motivating.

"*I think it is helpful. Like we have mind maps. I also see some pictures; you can learn vocabulary*". (Student No. 10). *Some more students also prefer the use of pictures as aids to learn vocabulary*". (Students No. 4, 5, and 10)

"*I find it very helpful because you can connect the picture of the word, and you can listen to the word from videos*". (Student No. 9).

"*Many students consider videos to be helpful, engaging, and entertaining*". (Students No. 1, 6, and 8)

e. In your opinion, how do you want to learn new vocabulary?

Eight out of ten students said they wanted to learn new vocabulary by watching videos. These are some answers from students:

"*I like to learn new vocabulary words in movies and YouTube. Because it is the best way to learn*". (Student 6)

"*There are some methods to learn new vocabulary and new words. The easiest way, and every student, maybe like it, using the internet*

and media internet". (Student 8). Three students (No. 4, 5, and 10) mention their preference to learn vocabulary through conversation with their friends besides using the internet. To sum up, students prefer using new technology such as the internet, especially videos, in addition to 'conversation' as a learning tool to learn vocabulary.

f. Do you keep a list of vocabulary?

They think it is unnecessary to keep a list of vocabulary; they want to learn a word and immediately put it into use. To this question, four students (No. 3, 4, 5, and 7) answered "No"; two students (No.6 and 9) answered, "Sometimes". Only three students (1, 2 and 10) have answered "Yes" to this question. They write the new vocabulary in their notebooks to remember them easily; for instance, a student says, "In my exercise book, if the word is tough; and sometimes in my brain." (Student 10).

g. Anyone else help learn new vocabulary? For instance, through group discussion or questioning in pairs, etc.?

All students answered "yes" except for only one student who likes to study alone while learning words. Among the remaining nine students, six students (No. 2, 3, 5, 7, 8, and 10) prefer talking, gaming, sharing, practicing, and discussing new vocabulary with their friends; in some cases (three students – No. 1, 6, and 9) they choose to interact with their parents, any other family members, or other partners available. "Yes. Make a challenge or game with your friends". (Student 7). The trend here indicates that students prefer to learn through interaction rather than studying alone. If strategies involve interactive and competitive tasks, such as games, quizzes, etc., with fun and purpose to achieve, students are ready to participate.

h. After learning a new word, how often do you review the word?

In students' view, putting the vocabulary into daily use in every possible way is the best option: pronouncing a new word repeatedly, reading or writing it several   times, using it in conversation with people around us, and using the word   in sentences, as shown in the following responses:

"*Use the notebook. And read another time*". (Student 1)

"*By learning a new word, I use it every day and use it with my teacher and friends and also use it in exams and writing exams*". (Student 8)

"*Sometimes at the weekend on Friday and Saturday. I used to review this word again. And save it in my brain*". (Student 6).

The students' answers reveal that revision helps students to remember and use the new vocabulary; the students know about the significance of reviewing a newly learnt vocabulary. If more systematic ways of revising words are taught, that could speed up the learning process.

i. Tell me about any interesting, memorable session of learning new words.

For this ninth interview question, the students' responses made it clear that students rarely encounter effective vocabulary teaching. Effective strategies are needed for the house. Responses from seven students show a negative picture of the state of vocabulary teaching devoid of impressive strategies because three students (No. 1, 4, and 5) said they do not remember any memorable teaching sessions. Another set of 4 students (Nos. 7, 8, 9, and 10) gave irrelevant responses for unknown reasons. Only three students' (No.: 2, 3, and 6) responses provide some insight:

"*One time, when I was in Grade 7, we had a lesson about kitchen tools. So, the teacher bought some tools from the kitchen like knives, spoons, bowls, and many other things*". (Student 2)

"*Of course, I can remember it until now. Because of sort in group*". (activity given by the teacher) — (Student 3)

"*One day, I sit with my partner in the class and get the challenge to pronounce and write these words*". (Student 6)

The students' responses illustrate the grave need for effective vocabulary teaching strategies to provide memorable sessions for students. If the strategies are designed with appropriate teaching aids and meaningful activities, they can become memorable teaching sessions.

j. When you learn a new word, do you learn about its contexts, collocations, and phrases? Explain.

Most students have understood the importance of learning about context, collocations, and phrases but need effective strategies. Eight out of 10 students confirmed that they learned about the collocations and phrases of a new word by saying "Yes" to the interview question. They explain" I learn about it because it tells me to remember it and do not forget" (Student 9). Another student said, "I know. I should know context and collocations because I should know how to write them in words and sentences". (Student 6). "Yes. Because this is the best way". (Student 7)

Knowledge of a new word's contexts, collocations, and phrases can create strong mental linkages and clearly understand its usage. Students think that the knowledge of these elements would be helpful and help them proficiently use the language. Learning to use a word in contexts, with collocations, and in phrases will enhance their language and improve their exam performance.

4.4.2 Findings from the Classroom Observation Checklist

The Classroom Observation Checklist was used to identify indicators of memory strategies teachers use during their teaching sessions to teach vocabulary in their classrooms. In the first Classroom Observation Checklist, the teacher was using creating mental linkages (CML) strategy. The topic of the lesson was 'Tying the knot'. The new vocabulary taught were bride, groom, wedding, dowry, rings, ritual

marriage, marriage vows, honeymoon, best man. The teacher was using creating mental linkages (CML) strategy through grouping new words according to their meanings, putting words in some situational context, giving opportunities to revise what they learned, and the teacher used experience in physical responses, creating new words through mechanical meanings, knot meaning, definition, etc.

In the second Classroom Observation Checklist, the teacher was using creating mental linkages (CML) strategy. The topic of the lesson was "Beginning and Ending". The new vocabulary taught were societies, rituals, legalese, new year, resolutions, carnivals, occasions, celebrations, ceremonies. The teacher was using creating mental linkages (CML) strategy through grouping new words according to their meanings, putting words in some situational context, giving opportunities to revise what they learned, and the teacher used the experience as a physical response to practice a new phrase or term.

5. Discussion

Regarding the initial inquiry into the memory techniques utilized by Omani eleventh-grade students for learning English vocabulary, Exploratory Factor Analysis (EFA) and Principal Component Analysis (PCA) were employed. The outcomes revealed four primary categories of memory strategies used by these students. These categories were identified based on acceptable extraction loading values and eigenvalues exceeding 1 according to the Kaiser criterion, indicating their reliability (Tahir et al., 2020).

Exploratory factor analysis summarized the variables into four factors, elucidating the memory strategies employed by Omani eleventh-grade students for learning English vocabulary. The first factor, termed 'reviewing well' (RW), emerged as the most frequently utilized strategy, with a mean value of x=3.99 (usually). Following closely was the category 'applying images and sounds' (AIS), with a mean value of x=3.72 (usually). 'Creating mental linkages' (CML) constituted another category, although less frequently used, with a mean value of x=3.15 (sometimes). The least utilized category, 'employing actions' (EA), recorded a mean value of x=3.07 (sometimes).

Regarding the second research question, mean values and standard deviations were analyzed, showing a descending preference for memory strategies among students: Reviewing Well (RW) (x=3.99), Applying Images and Sounds (AIS) x =3.72, Creating Mental Linkage (CML) x =3.15, and Employing Actions (EA) x=3.07. Notably, Reviewing Well (RW) attained the highest mean value (x=3.99), indicating its widespread use among students. This finding aligns with Al-Qaysi and Shabdin's (2016) report, affirming the popularity of RW strategies among Arab learners.

Furthermore, the third factor, Creating Mental Linkages (CML), while less utilized, represents an important aspect of vocabulary learning. Despite its underutilization, CML strategies, such as associating words with personal experiences or focusing on phrases and collocations, offer valuable avenues for enhancing vocabulary retention. On the contrary, Employing Actions (EA) emerged as the least preferred strategy, echoing findings from prior studies (Mohd Tahir & Tunku Mohtar, 2016; Tahir et al., 2021; Binti Suhaedi, 2018). This reluctance to engage with EA strategies may stem from a preference for simpler memorization techniques among Omani students, as suggested by Schmitt (2000).

The study underscores the importance of tailored instructional materials and strategies to accommodate learners' preferences and optimize vocabulary acquisition. By emphasizing commonly used strategies like RW and AIS, educators can enhance students' vocabulary learning experiences. Additionally, incorporating collaborative learning and contextual learning approaches may further enrich students' vocabulary acquisition process.

Lastly, insights from classroom observations and student interviews highlight the significance of understanding the contextual and collocational aspects of vocabulary. Students recognize the value of integrating new words into meaningful contexts and phrases, emphasizing the need for comprehensive language learning strategies. Teachers play a pivotal role in facilitating these strategies through interactive activities and leveraging available resources effectively.

6. Conclusion

Based on the findings of this research, it is evident that the memory strategies employed by Omani eleventh-grade EFL learners significantly contribute to enhancing their vocabulary proficiency and promoting better learning outcomes among students at this grade level. Through exploratory factor analysis, the study identified four key dimensions of memory strategies: 'Reviewing well' (RW) with four items, 'Creating mental linkages' (CML) with nine items, 'Applying images and sounds' (AIS) with four items, and 'Employing actions' (EA) with eight items. The analysis revealed that 'Reviewing well' (RW) had the highest mean value of x=3.99, indicating its frequent usage among students, followed by 'Applying images and sounds' (AIS) with a mean value of x=3.72. 'Creating mental linkages' (CML) and 'Employing actions' (EA) were less frequently utilized, with mean values of x=3.15 and x=3.07, respectively.

Additionally, insights from semi-structured interviews underscored students' belief that expanding their vocabulary would lead to success. Many students expressed confidence in their ability to learn new English words easily, utilizing various resources such as dictionaries, YouTube videos, films, and online practice with friends. They found aids like pictures, videos, and real-life examples beneficial for vocabulary acquisition, often preferring digital platforms for learning.

Furthermore, employing the 'Creating mental linkages' (CML) strategy during vocabulary lessons was found to enhance students' grasp of target words, thereby improving their overall vocabulary knowledge. This study serves to raise awareness among educators and the public regarding the importance of vocabulary memorization strategies in second language acquisition. It emphasizes the need for tailored classroom instructions to meet students' needs and advocates for the integration of memory strategies into the English curriculum to enhance students' vocabulary proficiency.

7. Recommendation for Future Research

The research also points towards various avenues for further exploration and practical applications. As such, it offers several recommendations for future research, acknowledging the limitations of the current study and suggesting potential areas for advancement based on its data analysis.

1. It is suggested that future studies delve into the examination of memory strategy preferences for vocabulary learning among Omani EFL students across schools in Oman. This broader scope would enable a more inclusive participation of learners in such investigations.

2. Subsequent research endeavors could involve selecting learners from different grade levels or age groups. Additionally, the characteristics of the sample, including variations in gender, family background, attitudes, beliefs, and race, could be considered to provide a more comprehensive understanding.

3. Given that the current study focused solely on male students, reflecting the education system's dynamics in Oman, future investigations might benefit from including female learners. Gender-based studies indicate that female and male students often employ distinct strategies for vocabulary acquisition. Hence, incorporating female eleventh-grade students could offer valuable insights into the diversity of memory strategy preferences among learners.

Authors contributions

Ahmed Hamed Rashid Al Abri provided input in planning and designing the research study, contributing to the formulation of research questions, hypotheses, and objectives. Dr. Mohd Haniff Mohd Tahir participated in interpreting the results, discussing the implications, and offering insights based on the findings and theoretical framework and Syahwil Saputra contributed to drafting sections of the manuscript, including the introduction, methodology, results, discussion, and conclusion. All the authors collaboratively worked on drafts and revising the manuscript to improve clarity, coherence, and accuracy based on feedback from co-authors or reviewers. Also, all writers offered final approval for the submission of the manuscript, ensuring that it meets the standards and requirements of the target journal.

Competing interests

The authors assert that they possess no identifiable conflicting financial interests or personal affiliations that may have seemed to impact the research presented in this paper.

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