# Applying Memory Strategies for Developing Primary School Pupils Vocabulary Acquision

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# " تطبيق استراتيجيات التذكر لتنمية اكتساب المفردات في اللغة الإنجليزية لدى تلاميذ المرحلة الإبتدائية "

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## المستخلص

هدفت الدراسة الحالية لتحديد فاعلية استخدام استراتيجيات التذكر لتنمية اكتساب المفردات في اللغة الإنجليزية لدي تلاميذ المرحلة الإبتدائية. تكونت عينة الدراسة من ٤٠ طالب بمدرسة المحافظة على القرأن الكريم الإبتدائية ببنها بمحافظة القليوبية. تم تقسيم العينة إلى مجموعة تجريبية وعددها ٢٠ طالب ومجموعة ضابطة وعددها ٢٠ طالب. إستخدمت الدراسة الحالية الأدوات الآتية: شكلان متكافئان من اختبار اكتساب المفردات في اللغة الإنجليزية (من إعداد الباحثة) ، وأداة لتصحيحه. تم تطبيق إختبار اكتساب المفردات في اللغة الإنجليزية قبل وبعد تطبيق الإستراتيجيات. أظهرت نتائج الدراسة فاعلية تطبيق الإستراتيجيات المقترحة فى تنمية مهارات اكتساب المفردات في اللغة الإنجليزية لدي تلاميذ المرحلة الإبتدائية ، حيث أن نتائج المجموعة التجريبية كانت أفضل من نتائج المجموعة الضابطة فى مهارات اكتساب المفردات في اللغة الإنجليزية.

# Applying Memory Strategies for Developing Primary School Pupils Vocabulary Acquision

## ABSTRACT

The purpose of  this study was to investigate the effectiveness of applyingmemory strategies for developing vocabulary skills among primaryschool pupils. The participants were forty pupils in fifth year from Al Mohafaza Ala QuranSchool in Benha at Quliobeya Governorate. The participants of the study were divided into two  groups, the experimental group (N=20) and the control group (N=20). The pre vocabulary test was administered to the participants before the treatment. Then, the experimental group was taught memory strategies using encoding, retrieval, transfer, generation and monitoring strategywhile the control group was taught using the traditional method. Then the post vocabulary test was administered to both groups. Results of the study revealed that the program using memory strategies was effective in developing vocabulary skills among the primary school pupils .

**Key words**: memory strategies, vocabularyskills , encoding , retrieval , transfer, generation and monitoring strategy.

### Introduction :

In order to better understand how one best learns, we must first understand the mental processes underlying how we develop strategies and associations when learning. While many of our cognitive processes relate to what we know (for example, Wernicke's area houses our knowledge of words and their definitions) the executive functioning processes in our brain dictate and organize what we decide to do and how we go about doing it (Lezak, Howieson, Loring, Hannay,& Fischer, 2004). In other words, executive functions are used as the 'how' we strategize to encode the 'what' that we must learn. There are multiple theories of the structure of our executive functioning abilities, with some being as simple as one "central executive" that directs and oversees working memory (Baddeley, 1996) to McCloskey's Holarchical Model of Exective Functions which includes multiple tiers, domains, levels and 32 self-regulation executive functions that interact on all of these different levels (McCloskey & Perkins, 2013).

McCloskey's model is the most comprehensive and inclusive model, and includes the key points from the most well-known models from the past sixty years (McCloskey & Perkins, 2013). Although all of the aspects of McCloskey's model interact in every realm of an individual's life, not just when learning academic content, there are certain clusters within the self-regulation tier that have particular relevance for how one can most efficiently learn academic material. The self-regulation tier is the coordinator of one's functioning from second to second; it acts like a conductor of an orchestra, cuing cognitive activities as they are needed in order to create something meaningful.

According to McCloskey's model (McCloskey & Perkins, 2013) there are six clusters within the self-regulation tier which are composed of 32 individual self-regulatory executive functions, all of which are necessary, to some degree, to function optimally in daily activities, including studying and learning. The first is the attention cluster, which includes abilities such as attending to relevant external information for as long as is necessary. The second cluster is engagement, which involves the ability to begin an activity, put the requisite energy into it, pause or switch flexibly between activities, and then end an activity at the appropriate time. The third is the optimization cluster, which consists of the ability to monitor one's progress, make changes as needed to maintain progress towards a goal, and balance

cognitive functions in a way which optimizes one's ability to achieve a goal. The evaluation cluster may be the most related specifically to how one learns academic information and completes school work; it is also the most complex. The abilities in the evaluation cluster include understanding and analyzing task demands, and estimating how much time will be needed to complete tasks, making connections and comparing new information to previously learned information, generating and engaging in new problem-solving behaviors, planning out a strategy, anticipating consequences of these strategies, and finally choosing a strategy. The efficiency cluster is similarly important in studying behaviors because it focuses on monitoring and changing the pace of activity, in addition to organizing new strategies or implementing past strategies that can generalize to the new situation. Finally, the memory cluster consists of abilities like holding and manipulating information in working memory, storing information in short-term or long-term memory, and retrieving that information later.

Over the years, many assessments of aspects of executive functioning have been developed. One of the most commonly used tests is the Wisconsin Card Sorting Test (WCST). The premise of the WCST (Heaton, Chelune, Talley, Kay, & Curtiss, 1993) is that the participant is presented with four cards known as key cards. Each has a different number, color, or type of symbol (e.g., one red triangle). They are given a stack of cards and told to match the cards in the stack to one of the key cards, but they are not told how to do so. The examiner tells them each time whether they are right or wrong, however only the examiner knows what the rules are (e.g., matching to color, number, or type of symbol). The participant needs to deduce what the rules are by changing their approach depending on the examiner's feedback. In addition, the rules change over time, so the participant needs to be constantly monitoring and changing tactics to be successful.

### Executive Function of memory strategies

The WCST measures multiple aspects of executive functioning including strategy use, progress monitoring (e.g., whether progress is being made towards the goal), switching mental set (e.g., changing between sets of rules), and inhibiting responses that are no longer correct (Heaton et al.,

1993). Many of the scores calculated from this test can be used to better understand aspects of an individual's executive functioning abilities. Trials to complete the first category reflects how well the participant was able to initially conceptualize the task prior to a rule switch (Heaton et al., 1993). An unusually high number of preservative errors can indicate difficulties with concept formation, integrating feedback from the examiner and overall difficulty with cognitive flexibility (Lezak et al, 2004). Failure to maintain set can be indicative of difficulty continuing an appropriate strategy or inattention (Lezak et al., 2004). The score for percent conceptual level responses can show how well the participant understood how to categorize and organize their responses, while learning to learn indicates how quickly they learn how to organize their responses (Heaton el al., 1993). Non preservative errors is generally thought to represent either an overly elaborate strategy or random guessing (Lezak et al., 2004). The total number of categories completed combines many of these aspects into an indicator of cognitive flexibility and concept formation (Heaton et al., 1993).

In recent years, various executive functioning abilities have been found to mediate memory and learning. Although the California Verbal Learning Test-Second Edition (CVLT-II) is considered to be a test of learning and memory, there is evidence that executive functioning ability affects performance on the assessment. Hill, Alosco, Bauer, and Tremont (2012) conducted a study in which they sought to determine how much of the variance of scores on the CVLT-II were accounted for by a global executive functioning score composed of scores from the WCST (preservations), Trail Making Test (Part B), the controlled oral word association Test (COWAT), animal naming fluency (semantic fluency), and similarities from the Wechsler Adult Intelligence Scale, Third Edition (WAIS-III). They found that between 24%-31% of the variance in scores of discriminability, short-term recall, and long-term recall on the CVLT-II, was due to participants' executive functioning abilities.

The CVLT-II measures the ability to learn a list (List A) of 16 words over five trials, with a distractor list B, followed by immediate free and cued recall tasks with similar delayed recall tasks approximately 20 minutes later (Delis, Kramer, Kaplan, & Ober, 2000). Both lists consist of four semantic categories with four words per category; the categories for List A include: vegetables, transportation, furniture, and clothing. The cued recall trials give

an opportunity not only to cue the examinees to the categories and facilitate recall, but also encourages them to utilize a clustering technique while recalling the words.

Those who utilize semantic clustering strategies, by grouping semantically related words spontaneously, tend to remember more words on free recall trials than those who do not use semantic clustering. (Manning & Kahana, 2012). Although introducing the semantic categorization of the list after the five learning trials can promote recall and help the examinees sort the words into categories after the "learning" trials (Delis, Kramer, Kaplan, & Ober, 2000), Butters and Cermak (1980) found that semantic clustering occurs while people are taking in and encoding the information. The CVLT-II lends itself to participants discovering the four semantic categories and mentally reorganizing the words into those categories to more effectively encode the information for future retrieval.

Semantic clustering is not only a beneficial strategy for learning and retaining information, it is also a helpful strategy when attempting to retrieve semantic information during novel tasks such as semantic verbal fluency. Semantic verbal fluency is a measure in which an examinee is given one minute to name as many words as possible that meet certain parameters (e.g., types of animals or supermarket items). It measures both long-term semantic memory and executive functions involved in monitoring progress and switching tasks (Levelt, Roelofs, & Meyer, 1999). The ability to switch between tasks includes the ability to cluster words that are semantically related and then quickly change to a new cluster of related words, which enables examinees to produce more words than without using a clustering strategy (Troyer, Moscovitch, & Winocur, 1997; Abwender, Swan, Connolly, & Bowerman, 2001). Overall, the ability to semantically cluster is useful, not only in learning and recalling lists of related words (Delis et al., 2000), but also when generating words within a semantic category (Troyer et al., 1997; Abwender et al., 2001).

Although it is generally the left temporal lobe that is considered the center for the encoding, consolidation, and retention of information (Hill, Alosco, Bauer, & Tremont, 2012), there is growing evidence that the frontal lobes are also necessary for successfully creating memories. Specifically, the prefrontal cortex has been implicated in successful encoding and

retrieval processes (Jennifer & Henry, 2020 ; Ovadya, 2020) particularly when engaging in the retrieval of semantic information (Raposo, Mendes, & Marques, 2012).

In order to learn information, one must be able to quickly and efficiently organize information and make connections. This means that different parts of the brain, particularly within the frontal and temporal lobes, need to communicate with each other similarly quickly and efficiently. This communication is conducted through white matter networks which are composed primarily of the axons that carry information between neurons (Kolb & Whishaw, 2015). From birth through adolescence, these axons go through a process called myelination in which a sheath of myelin wraps around the axons in segments. These segments of myelin allow faster conductivity through the axons and thus quicker and more efficient communication to the next neuron (Kolb & Whishaw, 2015). Myelination occurs first in early childhood in brain areas that are needed to perceive sensory information or perform simple movements (Kolb & Whishaw, 2015). White matter in brain areas related to higher cognitive functions, like the frontal lobes which are needed for various executive function abilities, continue to myelinate into adulthood (Sowell et al., 2003). Because the brain areas that are thought to be most important to executive functioning, and therefore strategy use, are still undergoing the myelination process through early adulthood, it stands to reason that students' abilities have not yet reached their peak potential in their ability to efficiently learn. In essence, they are being asked to develop strategies on their own when they are still in the midst of developing the cognitive capabilities of doing so.

There are many studies which dealt with memory strategies. One of these studies is the following study that aims to determine whether undergraduate students are able to independently utilize beneficial learning strategies in order to learn novel information, a key factor in academic success. As undergraduate students primarily learn material through verbal means in lecture format classes, participants in this experiment were administered the CVLT-II to determine their ability to learn novel information. An important aspect of the CVLT-II is that the words included in the task can be organized semantically into four categories: furniture, modes of transportation, animals, and vegetables. In order to determine whether undergraduate students are able to use learning strategies

independently or if they still need more scaffolding in their college years to best learn material, participants were randomly assigned to either a control group in which they were administered the CVLT-II in a standardized format, or an experimental group in which participants were explicitly told during the initial instructions of the CVLT-II that each of the 16 words presented fit into one of four categories and what those categories are.

Young adults brains are still in the midst of development, particularly the myelination of white matter tracts within the frontal lobes (Sowell et al., 2003). These white matter tracts are necessary for various executive functioning abilities which help individuals self-monitor, organize information, and problem solve, among other tasks necessary for academic success (McCloskey & Perkins, 2013). When adolescents and young adults are learning in a high school setting, teachers impose external organization on the information that needs to be learned, including study guides and practice problems. In college, professors are less likely to impose a specific organizational structure on the information to be learned, instead leaving students to generate their own strategies to learn and encode new information.

So, the purpose of this study was to better understand how undergraduate students learn and whether their ability to encode and recall new information improves with explicitly presented organizational strategies. To do this, an experiment was created in which current undergraduate students were divided into two groups for a brief battery of neuropsychological assessments involving word list learning and executive functioning measures. One group received standardized instructions for a list learning task, which necessitated the development of their own strategies for learning and encoding the words. The other group received instructions that specified that the words belonged to the semantic categories, and that organizing them by category may help them learn the words better.

### The relationship between semantic clustering and word list recall

The previous study demonstrated a significant positive relationship between semantic clustering and the number of words recalled at the immediate and delayed recalls, which replicates previous research showing

a similar relationship (Manning & Kahana, 2012). These findings were found to be true considering the whole sample as well as when each group was analyzed individually. These findings give more credence to the idea that using a semantic clustering strategy is a helpful strategy for recalling lists of semantically related words. However, as this is a correlational finding, we cannot say for sure that the use of semantic clustering impacts word recall, as word recall could affect the use of semantic clustering. Still, due to this positive association, it may be helpful for teachers to organize their lectures around a theme in order to facilitate better recall from their students.

### Multicomponent Working Memory Model

Baddeley and Hitch's (1974) multicomponent working memory model preceded Cowen's embedded processes model by over ten years, and has been the most influential in neuropsychology (Gruszka & Orzechowski, 2016). The multicomponent working memory model is a simplistic model comprised of central executive functioning, which is closely connected to the phonological loop and visual- spatial sketchpad. The episodic buffer is a fourth component, subsequently added in 2000 to build on the initial model and separate attention and storage systems (Baddeley, 2012; Baddeley et al., 2018). Central executive functioning is the most complex part of the working memory model (Baddeley, 2012). This was initially considered a limited capacity workspace, alternating storage and process (Hitch, 2002). More recently the model has been discussed in terms of different functions, including resource sharing and selective attention (Hitch, 2002). The phonological loop is where small amounts of verbal information are briefly held in storage and maintained or controlled through subvocal rehearsal (Baddeley, 2012; Baddeley & Hitch, 1974; Hitch, 2002). The visuospatial sketchpad is the visual equivalent of phonological loop (Baddeley, 2012; Baddeley & Hitch, 1974; Hitch, 2002), sometimes described as the "inner eye". The episodic buffer links acquisition and retrieval of information to long-term memory (Gruzska & Orzechowski, 2016). The Baddeley and Hitch multicomponent model is the most relevant for school psychologists. The model informs neuropsychology, which supports processing assessment practices and development. School psychologists regularly use processing

assessment tools to ascertain student strengths and weaknesses, therefore directly impacting daily practices of school psychologists and the students they serve. Accordingly, this doctoral project focused on the context of the multicomponent model.

Working memory theories support a global understanding of the connections between working memory and academic skill requirements. Working memory directly relates to a student's ability to manage multiple academic demands. This is especially evident in the high school environment, as there are multiple classes, higher level content, and more advanced memory load expected of students as compared to elementary school. Middle adolescent males are vulnerable during this time of development, since the brain functioning required for executive skills has not yet fully matured. School psychologists need to consider the cognitive functioning capability of middle adolescent males within the framework of working memory theories.

## Working Memory Functioning And Academic Performance

Working memory affects skill acquisition across content areas. Working memory is correlated to a student's skill reading development, math calculation, math reasoning, reading comprehension, written expression, and acquiring vocabulary (Alloway, Banner, & Smith, 2010; Dehn, 2014b; Hitch, 2002). Working memory capacity is highly related to academic learning, as it relates to encoding information for long-term memory (Dehn, 2019). Additionally, language impaired children experience deficits in the phonological loop, which impacts native and non-native vocabulary acquisition (Hitch, 2002).

Working memory is so important that it was found to be the strongest predictor of academic success in high school, according to a recent longitudinal study (Ahmed et al., 2019). Ahmed et al. (2019) found that "after controlling for early achievement, demographic, and home environment variables, only working memory at 54 months significantly predicted working memory at 15 years and that working memory was the only significant EF predictor of achievement at age 15" (Ahmed et al., 2019, P.446). Working memory is an important factor in language development,

both in facilitating or inhibiting foreign language acquisition. Bilingual individuals have greater working memory capacity (Dehn, 2019). Phonological short-term memory is used when learning a foreign language. For example, in one study, participant performance on backward digit span test was evaluated. Digit span is an example of storing and manipulating information using working memory. Digit span performance correlated very highly with overall English language competence, as well as with reading, listening, speaking and use of English (vocabulary and grammar) test scores (Kormos & Safar, 2008). School psychologists can communicate this information with secondary school counselors when creating schedules, as well as foreign language instructors to advocate for students with memory difficulties.

Overall, an adolescent's cognitive style, or how they organize learned information, is related to academic success. The cognitive style is strongly related to working memory skills (Alloway et al., 2010). Those students with weaker working memory perform more poorly across academic subjects (Alloway et al., 2010). Although the middle-adolescent male is impacted as a whole by working memory, a subset of the population is most susceptible to related academic problems. Students with ADHD exhibit the most exacerbated working memory deficits, linking them to higher risk for academic difficulties. Therefore, this population is the most in need of working memory intervention by school psychologists.

## Working Memory Training

Research has shown that cognitive working memory training enhanced working memory performance (Ackermann et al., 2018). Working memory training activates the frontoparietal network of the brain, which is believed responsible for working memory operation (Thompson et al., 2016). Working memory training is believed to enhance aspects of working memory in youths with learning disabilities and ADHD (Gray et al., 2012). Schwarb et al.'s (2016) study showed the ability to inhibit responses to irrelevant information was enhanced through working memory training.

For the most effective results, working memory should be targeted in isolation, rather than in conjunction with other executive function skills. When training short-term memory alone, there were more improvements in

short-term memory (Rapport et al., 2013). Working memory training is also considered a better option compared to other available working memory interventions for schools. For example, central executive training (CET) is superior to behavioral parent training (BPT) for improving working memory (Kofler et al., 2018).

Working memory training is an evidence-based solution to support students with ADHD and working memory deficits. However, there are multiple working memory training models, such as classroom instruction. School psychologists need to review multiple models to determine which would be implemented with best practices in the school environment.

Classroom instruction is a valuable model for intervention. Teachers and other educators need to understand the importance and pedagogy of teaching within a student's working memory capacity. When curriculum is adapted to reduce working memory load, student performance increases (Hussein & Reid, 2009).

Classroom teachers can adjust classroom routine by identifying working memory challenges, breaking down information, and building long-term knowledge (Alloway & Copello, 2013). Breaking down information prevents struggles with task completion. If a task exceeds a student's working memory capacity, the student cannot complete the task (Alloway & Copello, 2013). Building long-term knowledge prevents working memory overload. Reducing cognitive load effectively supports working memory functioning in the classroom (Dehn, 2014a, 2014b). When teachers understand the variables related to cognitive load (e.g., the amount, sequence, and organization of materials, whether information should be processed or remembered), they can design instruction in a mindful way and teach students to manage their cognitive load (Dehn, 2014b). Memory mates is one example of a classroom-based memory intervention, designed for independent student use with a teacher's support (Colmar & Double, 2017). However, at this time, memory mates has documented use only with elementary school students.

Abbassi, A.; Hassaskhah, J.; and Tahriri, A. (2018) explored the effect of memory strategy on EFL learners' vocabulary retention with a consideration of learners' multiple intelligences. In this study, the memory strategy consisted of three parts of grouping, acronym and images. The

participants of this study were 80 male and female EFL learners of intermediate level who underwent 12 hours of instruction in a language institute. They were chosen through convenience sampling and then they were randomly divided into an experimental group and a control group. The experimental group was directly taught how to implement memory strategies in learning vocabulary. A pre-test post-test control group design was carried out to collect the required data through vocabulary tests, memory strategy and multiple intelligence questionnaires.

The results showed that the experimental group's vocabulary retention statistically improved. Moreover, the relationship between MI and vocabulary retention of Iranian EFL learners was reported statistically significant. This positive relationship was particularly reported between existential MI, linguistic MI scores and spatial MI scores and vocabulary scores. The finding provided information on how to teach English vocabulary in EFL classes and also recommended that teachers exploit MI in the teaching processes. It also suggests that educators, learners, policy makers, material producers, and syllabus designers move from traditional-based approaches to more innovative ways of teaching vocabulary.

Sibanda, J.; Baxen, J. (2018) investigated the potential of Grade 3 English Second Language (ESL) teachers' vocabulary development practices to equip learners in English-deprived environments with English vocabulary requisite for transition to Grade 4 where English is the language of learning and teaching and where learning to read gives way to reading to learn. This study sought to document and interrogate incidental and explicit Grade 3 ESL teachers' vocabulary development practices vis-a-vis learners' vocabulary needs. Three classrooms from one township and two diverse rural schools in three different districts of the Eastern Cape province of South Africa were observed.The case study sourced qualitative data through video and field notes recorded in classroom observations in 10 English first additional language classes for each teacher. Quantitative data on teacher talk vocabulary exposure and recycling were generated using the AntConc 3.2.4 software.

The study found that the incidental vocabulary development was compromised by low English language exposure occasioned by teachers' frequent recourse to the home language, little word recycling in classroom talk and lack of rich contexts in which words were encountered. Explicit

vocabulary instructional practices mostly drew learners' attention to novel words and had a narrow range of strategies dealing with word meanings. In view of the manifest lack of a robust vocabulary development programme among ESL teachers, the study recommends planned and deliberate attention to vocabulary development on the teachers' part and a reconsideration of the learners' vocabulary needs and learner meaningful engagement in vocabulary development.

Mascelloni, M.; Zamparelli, R.; Vespignani, F.; Gruber, T.; and Mueller, J. L. (2019) viewed that in order to memorize sentences we use both processes of language comprehension during encoding and processes of language production during maintenance. While the former processes are easily testable via controlled presentation of the input, the latter are more difficult to assess directly as language production is typically initiated and controlled internally. In the present event-related potential (ERP) study, we track sub vocal rehearsal of sentences, with the goal of studying the concomitant planning processes with the help of a silent cued-production task. Native German participants read different types of sentences word-by-word, then were prompted by a visual cue to silently repeat each individual word, in a rehearsal phase.

In order to assess both local and global effects of sentence planning, we presented correct sentences, syntactically or semantically violated sentences, or random word order sequences. Semantic violations during reading elicited an N400 effect at the noun violating the selectional restrictions of the preceding verb. Syntactic violations, induced by a gender in congruency between determiner and noun, led to a P600 effect at the same position. Different ERP patterns occurred during the silent production phase. Here, semantically violated sentences elicited an early fronto-central negativity at the verb, while syntactically violated sentences elicited a late right-frontal positivity at the determiner. Random word order was accompanied by long-lasting slow waves during the production phase. The findings are consistent with models of hierarchical sentence planning and further indicate that the ongoing working memory processes are qualitatively distinct from comprehension mechanisms and neurophysiologically specific for syntactic and lexical-semantic level planning. In conclusion, active working memory maintenance of sentences is likely to comprise specific stages of sentence

production that are indicated by ERP correlates of syntactic and semantic planning at the phrasal and clausal level respectively.

Li, C.; Fan, L.; Wang, B. (2020) viewed that there is evidence that emotion induced during encoding impairs associative memory, yet the effect of post-encoding emotion (particularly positive emotion) on associative memory remains largely unclear. Two experiments were conducted to examine the effect of post-encoding positive emotion on associative memory for English vocabulary. In experiment 1, high school students memorized Chinese definitions of a list of English words, immediately recalled the Chinese definitions, watched a neutral or comic video, and took a delayed memory test 25 minutes after encoding.

The result showed a significant impairing effect of post-encoding positive emotion on memory for Chinese definitions. In experiment 2, primary school students encoded English words with their associative pictures, took an immediate test where, on each trial, they were asked to choose the correct English word that matches a picture. Following the test, they watched a neutral or comic video, and took a memory test 10 minutes after encoding. Consistent with experiment 1, experiment 2 showed an impairing effect of positive emotion. Taken together, these findings support the hypothesis that post-encoding positive emotion can impair associative memory, providing important implications for acquisition of vocabulary of English as a foreign language.

### Background of the problem:

In spite of the importance of vocabulary skills, there is a lack in vocabulary skills among primary schoolpupils. Thus there is a need for finding an effective instructional strategies for developing vocabulary skills among primary schoolpupils.

In order to be fully sure of the problem of this study, the researcher conducted a pilot study including some texts. It requires students to read the text and answer questions that follow it. This test has been applied to fortyof fifth year primary school pupils. The results of this pilot study confirmed the low level of the pupils in vocabulary skills. So, it is clear that there is a great need for developing vocabulary skills among primary school pupils. This

study usedmemory strategiesfor developing vocabulary skills among fifth year primary school pupils.

## Statement of the problem:

The problem of the present research can be defined in the fifth year primary school pupils' inefficient vocabulary skills. Therefore, the present study is an attempt to investigate the effectiveness of memory strategiesfor developing the vocabulary skills among fifth year primary school pupils.

## Questions of the Study:

To face this problem, the present researchis an attempt to answer the following questions:

1. What are the memory strategiesneeded for developing vocabulary skills among fifth grade primary school pupils?
2. What is the effect of memory strategiesin developing vocabulary skills among fifth grade primary school pupils?

## Delimitations of the Study:

The current research is limited into the following:

- Twentyfifth graders of primary school in ElMohafza Ala Quraan School in Banha, Qalioubiya Governorate, Egypt.
- Some vocabulary skills (encoding, retrieval, transfer, generation and monitoring) required for the fifth year primary pupils.

## Hypotheses of the study:

1. There is no a statistically significant difference between the mean scores of the experimental group and the control group in the vocabulary skills pre test.
2. There is a statistically significant difference between the mean scores of the experimental group and the control group in the vocabulary skills post test.

## Instruments and materials:

To achieve the purpose of the study, two equivalent forms of vocabulary skills test (prepared by the researcher) were used.

## Participants of the study:

The participants of the present study consisted of 40fifth year pupils from Al Mohafza Ala QuranSchool, enrolled in the academic year (2020-

2021). Two intact classes were selected for participating in the study; class 5/A (n=20) served as the experimental groupand class 5/B (n=20) served as the control group.

**Procedures of the study:**

After the participants in the research have been selected, The participants of the study were divided into two groups, the experimental group (N=20) and the control group (N=20). The pre vocabulary test was administered to the participants before the treatment. Then, the experimental group was taught memory strategies using encoding, retrieval, transfer, generation and monitoring strategy while the control group was taught using the traditional method. Then the post vocabulary test was administered to both groups. Results of the study revealed that the program using memory strategies was effective in developing vocabulary skills among the primary school pupils .

**Findings of the study:**

The results of the research will be presented in the light of following hypotheses:

**1. Findings of the first hypothesis:**

The first hypothesis states that "there is no a statistically significant difference between the mean scores of the experimental group and the control group in the vocabulary skills pre test".

For testing this hypothesis, t-value was calculated to reveal that the difference between the two groups in the vocabulary test (pre test). To measure the effect size of the treatment, in the vocabulary pre test. The effect size (P) was calculated through the following table as follows:

**Table ( 1 ) T-test between the mean scores of the experimental group and the control group in the vocabulary skills pre test**

| Group | No. | Mean | Std. Deviation | t- value | Df. | P. |
|-------|-----|------|----------------|----------|-----|-----|
| Experimental | 20 | 1.84 | 0.79 | 6.19 | 14 | 0.5463 |
| Control | 20 | 1.80 | 0.77 | | | |

It is clear from this table that there is no significant differences between the experimental group and the control group in the pre test of vocabulary. The following figure shows this:
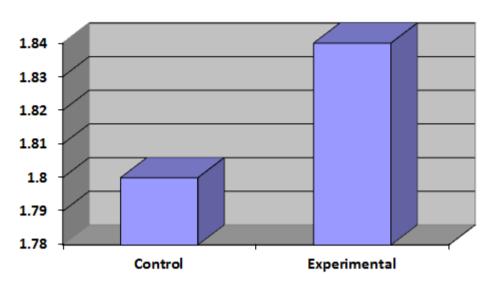
**Figure (1) : The mean scores of the experimental group and the control group in the vocabulary skills pre test**



## 2. Findings of the second hypothesis:

The second hypothesis states that "there is a statistically significant difference between the mean scores of the experimental group and the control group in the vocabulary skills post test".

For testing this hypothesis, t-value was used to signify the differences in the post test and the effect size (P) was also used to ensure and verify the treatment effect. The following table shows this:

**Table (2) : T-test between the mean scores of the experimental group and the control group in the vocabularyskills post test**

| application | No. | Mean | Std. Deviation | t- value | Df. | P. |
|---|---|---|---|---|---|---|
| Experimental | 20 | 9.05 | 1.20 | 5.82 | 14 | 0.000 |
| Control | 20 | 7.36 | 1.72 | | | |

It is clear from this table that there is statistically significant differences between the experimental group and the control group in the post test. This difference is in favor of the experimental group.The following figure shows this:
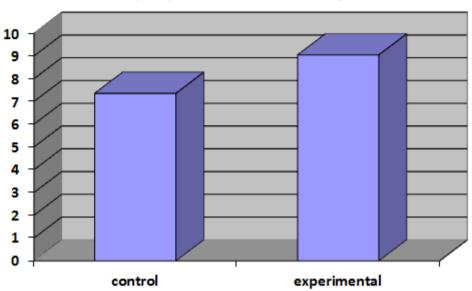
**Figure (2) : The mean scores of the experimental group and the control group in the vocabularyskills post test**



**Discussion of the results:**

The results of the present study indicated that using memory strategies leads to improvement in the pupils acquisition of vocabulary and communication with it. The pupils need different strategies to help them acquire vocabulary and to achieve complete smoothness in communication.

The results also showed that the first and most important element in vocabulary competence is their need to know the necessary words so as to be able to mention about them. This is well done through using recall strategies and retention.

The improvement in the pupils acquisition of vocabulary may be due to the various strategies of memory that the teacher uses in the study in accordance with the tenets of the modern methods which helped the pupils to understand what they need and continue to read. The results of this study are consistent with (Hitch, 2002 ;Hussein & Reid, 2009Baddeley, 2012  and Li, C.; Fan, L.; Wang, B. , 2020)

## Conclusion:

The present research attempted to develop the EFL vocabulary skills among fifth year primary school pupils through the use of memory strategies. The results of the current research proved the effectiveness of memory strategiesin developing vocabulary skills among fifth year primary school pupils.Therefore, memory strategies is recommended for fifth year preparatory pupils to develop their vocabulary skills.

## Suggestion for further research:

Based on the results of the present study, the researcher can recommend and suggest :
- Using different strategies in teaching EFL pupils vocabulary.
- Vocabulary learning should go along with pupils preference to use different multimedia in learning .
- Vocabulary learning should be given enough attention in EFL course.
- EFL teachers should enhance their skills in using new methods of teaching.
- The teacher should take into consideration the differences in EFL pupils' learning abilities and styles.
- The researcher suggests conducting further research to examine:
  A. Comparison between the traditional paper based learning and the new methods.
  B. The effect of multimedia glosses on vocabulary acquisition.
  C. The effect of new methods on the pupils engagement in acquisition.
  D. The effect of the memory strategies on the pupils' attitudes towards vocabulary learning.

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