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Learners' awareness of Memorization Strategies

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Abstract:

Memory deals with the processes of encoding, storing and retrieving information. Certain students face hard time in remembering what they have revised. However, effective memorization is based on the application of certain memorization strategies. The question to be asked is: What do our students lack to effectively memorize their lessons? We hypothesized that if first year students of English- at Badji Mokhtar University- were aware of the different memorization strategies, then they would effectively encode, store and retrieve the new learned information. A questionnaire was administered to investigate student awareness of the different memorization strategies and techniques.

Keywords: Memory, memory processes, short term memory, long term memory, Mnemonic devices, memory strategies..

الملخص:

تتناول الذاكرة عمليات ترميز وتخزين واسترجاع المعلومات. يواجه بعض الطلاب صعوبة في تذكر ما حفظوه. يستند الحفظ الفعال إلى تطبيق استراتيجيات معينة. السؤال الذي يطرح نفسه هو: إلى ماذا يفتقر طلابنا لحفظ دروسهم بشكل فعال؟ افترضنا أنه إذا كان طلاب السنة الأولى لغة إنجليزية- بجامعة باجي مختار يدركون استراتيجيات الحفظ المختلفة، فذاكرتهم في استرجاع المعلومات الجديدة ستكون أكثر فاعليه .تم استخدام استبيان للتحقق من إدراك الطلاب لاستراتيجيات وتقنيات الحفظ المختلفة.

الكلمات المفتاحية: الذاكرة، معالجات الذاكرة، الذاكرة قصيرة المدى، الذاكرة طويلة المدى، المونيمات، استراتيجيات الذاكرة.

Introduction

Cognitive psychology is the study of how people perceive, learn, remember, and think. Memory has a crucial role in learning as learners need to understand, memorize and retrieve information when needed. However, memorization is not a simple process, it goes through different stages. It is of different types: sensory, short term (working memory) and long term. Effective memorization is ensured when the new learned information becomes part of the long term memory. In addition, certain strategies ease the coding, storage and retrieval of information. They are of different types: imagery strategies and organization strategies. Awareness of these strategies leads learners to achieve more success in their study. Memory develops through practice and losses its potentials through shallow learning.

Memory

Memory received a lot of attention in cognitive psychology. Arnold (1999, p. 267) emphasizes that it is essential to all learning, and prominently so in second language learning. Roediger (2013) sees memory like a muscle that with practice becomes stronger in learning other materials (p. 1). Sternberg & Sternberg (2012) define memory as the means by which we draw on our knowledge of the past to use this knowledge in the present (p. 226). He distinguishes between recall and recognition. Recall is about producing a fact, a word, or other item from memory as Fill-in-the-blank. Whereas recognition is about selecting or identifying an item one has been exposed to previously (Idem, p.187).

Conversely, Matlin (2003) refers to retrospective and prospective memory. Retrospective memory deals with recalling information that one previously learned, while prospective memory is remembering to do things in the future (p. 170). He adds that prospective memory is studied much less often than retrospective memory. Friedenberg & Silverman (2006) explain memory decay as the loss of information over time (p. 127).

Memory Processes/Stages

According to Sternberg & Sternberg (2012, p. 230), cognitive psychologists generally refer to the main processes of memory as comprising three common operations: encoding, storage, and retrieval. Each one represents a stage in memory processing:

a) Encoding refers to how you transform a physical, sensory input into a kind of representation that can be placed into memory. Before information can be stored in memory, it first needs to be encoded for storage.
b) Storage refers to how you retain encoded information in memory.
c) Retrieval refers to how you gain access to information stored in memory.

Baddeley (2004, p. 7) defines them in simplified words as follows:

encoding, the processes whereby information is registered; *storage*, the maintenance of information over time; and *retrieval*, the accessing of the information by recognition, recall or implicitly by demonstrating that a relevant task is performed more efficiently as a result of prior experience. He further explains that encoding is studied by varying the nature of the material and/or the way that it is processed during learning, and storage is measured through forgetting. Besides, the two principal methods of memory retrieval involve recall or recognition. This requires the subject to say whether a given item was presented or not (yes/no recognition) or to choose the previously presented item from a set of two or more alternatives (forced choice recognition) (Idem).

Memory Types

According to Friedenberg & Silverman (2006), memory is of different types that differ in duration, capacity and coding. Duration refers to how long information remains viable in a memory system; capacity refers to how much information the memory system can hold, and coding refers to the particular type of information the system contains (Idem, p. 126). Memory types are as follows: Sensory memory, working memory and long term memory.

First, Friedenberg & Silverman (2006) see *sensory memory* as a repository for incoming sensory information. There are different forms of sensory memory as there is one for each of the five senses. Each of these forms have different characteristics. *Iconic memory* is a visual sensory memory. It holds a brief "snapshot" of what one has just looked at. Echoic memory is an auditory sensory store, as an "echo" of what one has just heard. The capacity of sensory memory is very large, but it is fragile in duration; it lasts between one to three seconds (Woolfolk, 2004, p.240). She adds that perception and attention are very critical at this stage. Perception is the process of detecting a stimulus and assigning meaning to it, and attention is to select stimuli and ignore others.

Second, *working memory* is also sometimes known as short-term memory. Some researchers use these terms interchangeably; information is briefly stored there. Working memory holds the information that is currently activated (Woolfolk, 2004, p.244). The information in sensory memory is available for further processing and it is transformed into patterns of images or sounds (Idem, p.242). The phonological loop is part of working memory; it is a memory rehearsal system for verbal and sound information about 1,5 to 2 seconds. Visuospatial sketchpad is a memory holding system for visual and spatial information. However, the duration of items residing in working memory is short, about 5 to 20 seconds or 30 seconds (Williams & Burden, 1997, p.16).

They add that most people's memory is considered to be at seven items at any one time. Working memory retains less information; its capacity is unlike the unlimited

capacity of the visual icon. Working memory is limited to storing just a small number. Whereas information in the different sensory stores is specific to modality, coding in working memory can be acoustic, semantic, or visual. Acoustic code is based on the sounds of the items (Friedenberg & Silverman, 2006, p. 129). Semantic code is based on the inherent meanings of the items; whereas visual code preserves spatial characteristics (Idem, p. 131).

Third, in *long-term memory*, individuals are capable of remembering information for longer than just a few seconds. Information enters working memory very quickly and to move information into long term storage requires more time and a bit of effort (Woolfolk, 2004, p. 246). She clarifies that most psychologists differ between two categories of long term memory: explicit and implicit. Explicit memory is knowledge from long term memory that can be recalled and consciously considered. Implicit memory is knowledge that we are not conscious of recalling, but that influences behavior or thought without our awareness. Explicit memory can be either semantic or episodic. Semantic memory is memory for meaning including words, facts, theories, and concepts (declarative knowledge). Episodic memory is information tied to a particular place or time, especially information about events or episodes of one's life.

However, implicit memory is of three kinds: classical conditioning, procedural memory, and priming effect. Classical conditioning refers to some out of awareness memories can cause you to feel anxious as you take a test. Procedural memory is memory of skills, habits, and how to do things. Priming effect is activating information that is already in long term memory through some- out-of-awareness process (woolfolk, 2004, p. 252).

The Seven Sins of Memory

Schacter (1999, p.183) refer to seven sins of memory: transience, absent-mindedness, blocking, misattribution, suggestibility, bias, and persistence. The first three refer to different levels of forgetting. Transience refers to increasing inaccessibility of information; absent-mindedness refers to the inattentive or shallow processing that contributes to weak memories of ongoing events or forgetting to do things in the future; blocking refers to temporal inaccessibility of information that is stored in memory. The three next sins involve distortion or inaccuracy. Misattribution refers to attributing a recollection or idea to the wrong source; suggestibility refers to memories that are implanted as a result of leading questions or comments during attempts to recall past experiences; Bias refers to retrospective distortions and unconscious influences that are related to current knowledge and beliefs. The last sin of the memory is persistence which is a pathological remembrance. It refers to information or events that we cannot forget, even though we wish we could.

Factors Affecting Memory

Sprenger (2005) advances that cognitive neuroscience considers five factors as necessary for effective learning. First, frequency refers to repeated exposure to the learning (p.7). Second, Intensity, requires rigorous practice; "A students will build neural support for the skill in a shorter period of time if she practices intensely" (Idem). Third, cross training, "different kinds of skills and different forms of memory should be used" (Idem). Fourth, adaptivity, teaching for memory requires the teacher to monitor the students' progress and adjust the teaching/learning situation to meet her needs (p. 8). Finally, motivation and attention are the factors that keep learners interested in their learning.

Moreover, Woolfolk (2004, pp. 252/3) refers to three main elements that help the storing and retrieving of information in long term memory: elaboration, organization and context. Elaboration "…is adding meaning to new information by connecting with already existing knowledge"(Idem, p.252). Organization, "Materials that is well organized is easier to learn and to remember" (Idem, p.253). Context refers to aspects of physical and emotional context: places, rooms, moods, and who is with us; "Context is a kind of prime that activates the information (Idem, p. 253). Similarly, Matlin (2003) sees that that the quality and the depth of memorization are affected by the learning context: emotional state, mood and the level of attention.

Oxford Memory Strategies

Oxford (1990) categorized language learning strategies into direct and indirect strategies. Memory strategies are part of the direct strategies that require mental processing of the language (p. 36). Oxford highlights that memory strategies are gaining their prestige as powerful mental tools (p. 38). She divides memory strategies into four sets:

1) ***Creating mental linkages through grouping***; as acronyms; ***associating/elaborating***, relating new information to previous one; and ***using context***, placing a word or phrase in a meaningful sentence/story to remember.
2) ***Applying images and sounds through using imagery***, either in the mind or in drawing; ***semantic mapping***, making arrangement of words into picture with a key concept at the top and concepts linked with the key concept by lines or arrows; ***using keywords***, remembering a new word by using auditory and visual links; and ***representing sounds in memory***, remembering new language information according to its sound.
3) ***Reviewing well*** in a carefully spaced intervals
4) ***Employing actions*** through ***using physical response or sensation***, physically acting out a new expression (as opening the window) or meaningfully relating a new expression to a physical feeling or sensation (as cold), and using mechanical techniques through

using creative and tangible techniques .

Effective Mmeorisation

According to Ruph (2007, p. 29), the origins of many difficulties in university stem from inappropriate memorization strategies as follows:

- difficulty in selecting what is essential to remember, to summarize, to synthesize;
- insufficient information organization;
- rote learning of poorly assimilated materials;
- the belief that understanding is sufficient to retaining;
- the lack of concrete and personal examples, lack of reference to our own reality;
- absence of rehearsal or revision exercises; tardy revision exercises, etc (.).

However, Dembo (2004) emphasize that efficient memorization refers to the effective storage of information in long term memory. Matlin (2003, p. 173) refers to the following points for an effective memorization:

1. Process information in terms of its meaning, rather than at a shallow level.
2. Relate information to your own experiences.
3. Try to learn material in the same context as the one in which you will be tested.
4. Don't be over confident about the accuracy of your memory for life events.
5. Do not divide your attention between several simultaneous tasks.
6. A Self-Management Approach is needed.

Sternberg & Sternberg (2012, p. 267) see that the transfer of information into long-term storage may be facilitated by several factors as follows:

1. Rehearsal of the information, particularly if the information is elaborated meaningfully;
2. organization, such as categorization of the information;
3. the use of mnemonic devices;
4. the use of external memory aids, such as writing lists or taking notes;
5. knowledge acquisition through distributed practice across various study sessions, rather than through massed practice.

For Matlin (2003, p. 161), "Practice makes better" since "Soon learned, soon forgotten". She provides the following steps for an effective practice:

1. The amount you learn depends on the total time you spend practicing
2. You will learn more if you spread your learning trials over time (the spacing effect)
3. Use the method of expanding retrieval practice; keep increasing the delay period when practicing retrieval.

Hence, learners learn better if they spread out their learning trials over time rather than learning the material at once and this refers to the spacing effect or the distributed practice effect. Furthermore, Jensen (2005)

emphasizes the importance of attention. He clarifies that "more attention guarantees greater content accuracy" (p. 142). He insists on fostering attention through asking questions, using novelty, personalizing the learning and focusing on details.

Mnemonic devices

Mnemonics is the use of strategy to help memory (Matlin, 2003, p. 162). She refers to mnemonics using imagery and mnemonics using organization. Mnemonic techniques use more than one sense for effective memorization. Mnemonics using imagery includes different memory strategies. First, *imagery* refers to mental presentation of objects or actions that are not physically present (Idem). These created images should be unusual or bizarre. Second, *the keyword or linkword Method* in which the learner identifies then links words in both the first and the second language to construct a picture in the mind (Williams & Burdens, 1997, p. 17). This method is mostly used in learning vocabulary. Matlin pinpoints that learners who use this method should devise a plan for translating the mental images into the new words they are learning (Idem, p. 164). Third, *the method of loci*, as the learner relates the items to be learned with certain specific locations. Matlin (2003, p. 165) sees that this method requires the learner to:

1. Visualise a series of places that s/he knows well, arranged in a specific sequences.
2. Make up an image to represent each item s/he wanted to remember.
3. Associate the items, one by one , with corresponding location in memory

Rhyming is also a type of mnemonic devices as learners find a way a memorizing the lesson depending on a rhythm as a song. However, Mnemonics using organization aim to ease the retrieval of information; "Organization is the attempt to bring systematic order to the material we learn" (Idem, p. 166). This mnemonic includes four strategies. *Chunking,* "in which we combine several small units into larger units"(Idem, p. 166). For example, a group of letters are string of letters was grouped according to meaningful, familiar units, rather than in arbitrary groups of three. *Hierarchy technique*, in which items are arranged in a series of classes from the most general classes to the most specific ones (ex: an outline). *First letter technique,* "you take the first letter of each word you want to remember and compose a word or a sentence from those letters (PRICE: *P*osition, *R*est, *I*ce, *C*ompression, *E*levation). *Narrative technique* 'instructs people to make up stories that link a series of words together" (Idem, p. 168). It is also known as chaining.

The study

Research Questions and Hypothesis

Learners are facing problems with long term memory. They believe they revised very well their lessons, but the problem is that when they need

the learned information they find difficulties. These students face problems in storing and retrieving effectively the new learned information. In fact, this research attempted to answer the following questions:

1. Are the students under investigation aware of the different memorization strategies?
2. What do impede them from memorizing effectively the new learned information?

We hypothesized that if first year students were aware of the different memorization strategies, then they would effectively encode, store and retrieve the new learned information.

Setting and participants

This study took place in the department of English, Faculty of Letters, Social and Human Sciences, University of Badji Mokhtar- Annaba-Algeria. In the module of study skills, sixty first year students were involved in the study; two classes of 30 students. The participants aged from 19 to 23. At this level, learners' are expected to attain certain level of proficiency in using English since the majority had at least seven years of English study.

Research Instrument

In the first semester of the academic year 2015-2016, a questionnaire was designed to first year students of English. It investigated learners' memorization strategies. It dealt with learners' revision, the frequency of their revision, and how they did so. Moreover, this questionnaire aimed at involving learners in reflection on their memorization strategies and techniques.

Results and Analysis

In answering the question about how they find their memorization process while revising their lessons, 50% found it easy, whereas it was difficult for 38,33%. For 5%, it depends on the lesson and the module, and for 1,66% it is normal. 5% did not provide any answer. Then, for half of the students under investigation, memorization is easy, but at the same time the other half face some troubles.

Besides, 15% affirmed that they remember ***all*** what they had revised whereas 81,66% do remember ***some*** of it. 3,33% affirmed that they forgot the majority of what they had revised. Hence, only a minority (15%) used effective memorization techniques, while the great majority faced some problems.

The students, under investigation, while revising used language skills differently as follows:

1. 26,66%: oral repetition/ and 26,66% written repetition
2. 23,33% use both oral and written repetition.
3. 16,66% only read their lessons.
4. 5% rely on silent reading
5. 3,33% use both written repetition and silent reading
6. 1,66% rely on oral repetition + Written repetition and reading.

Then, the majority of the students relied either on oral repetition (26,66%) or on the written one (26,66%) in order to memorize lessons. For an effective memorization, literature riview asserts that relying on more than one sense is better. Then, the use of isolated skills for memorizing lessons is not helpful; learners need to be aware of the importance of integrating language learning skills while revising. 23,33% relied on both (oral and written memorization) while 1,66% did use oral+ written + reading; they represent the minority. These learners show awareness of the importance of involving the different skills while revising.

Concerning the frequency of the repetition of the lesson for memorization, the majority (46,66%) opted for three times of repetition, 15% twice, 15% four times, 8,33% five times, 8,33% more than five times, 5% one time, and 1,66% provided no answer. Repetition and rehearsal are important ingredients of memorization. Effective memorization needs repetition for at least five times of the new learned information in order to shift it from the short term memory to the long term memory. However, the majority of students under investigation (46,66%) memorize just for three times. The minority of students (8,33% five times+ 8,33% more than five times) used the appropriate frequency of repetition for an effective memorization.

When asked about whether they understand what they memorized, 63,33% opted for ***always***, 33,33% ***sometimes,*** and 3,33% provided no answer. Hence, these students are aware that understanding is important for an appropriate storage of information in the mind and also for an easy retrieve.

Furthermore, students' timings of the revision for the exams/tests, are as follows:

a) 3,33% : Exam eve
a) 11, 66%: Day before the exam
b) 3,33%: Two days before the exam
c) 28,33%: Three days before the exam/test
d) ***28,33%: A week before the exam/test***
e) 6,66%: Two weeks before the exam/test
f) 3,33%: Three weeks before the exam/test
g) 1,66%: A month before the exam/test
h) 10%: Every day

Hence, the majority of the students, 28,33% began their revision three days befor the exam, and equally 28,33% started a week before. These timings for revision are not sufficient for an effective storage of information in long term memory. However, a minority (1,66%: A month before the exam/test+ 10%: Every day) did guarantee an adequate storage of information as they began the revision long time before the exam.

In relation with Oxford (1990) memorization strategies, here are learners' answers:

- 25% used acronyms for memorization while the majority 61,66% did not. 13,33% sometimes did so.
- 65% assured that they related the new learned information with the already known one, whereas 18,33% did not. 3,33% opted for sometimes.
- 41,66% tried to make a story for the lesson to be memorized. 55% did not, while 3,33% provided no answer.
- 81,66% visualized the lesson while memorizing it; 16,66% did not. 1,66% provided no answer.
- 53,33% affirmed that they used mind mapping in order to revise the lessons, 38,33% did not. And 8, 33% sometimes did so.
- 80% tried to find a word in Arabic or French that is similar to that word in English to memorize it. However, 20% did not.
- 20% affirmed that they made a song for the lesson to be memorized. 68,33% did not and 11,66% provided no answer.
- 78,33% did divide the lesson into smaller parts in order to revise it, whereas 20% did not. 1,66% did not provide answers
- 48,33% did relate the lesson with specific place (s) to memorize it. 50% did not and 1,66% did not answer.

Then, accounting for Oxford (1990) first set of memorization strategies, ***Creating mental linkages through grouping,*** a minority (25%) used acronyms to remember the new learned information. Besides, 65% of the students related the new learned information with the already known one through association and elaboration. 41,66%, used context, by making a story for the lesson to be memorized.

In the second set, ***Applying images and sounds through using imagery***, 81,66% of the students used their imagination for memorization. 53,33% used mind mapping, while 80% tried to find a word in Arabic or French that is similar to that word in English to memorize it. 20% of students related memorization with sounds and rhythm by making songs of the lesson. In the third set of memory strategies, ***Reviewing well*** in a carefully spaced intervals, students (78,33%) affirmed that they divided the lesson into smaller parts in order to revise it. Finally, ***Employing actions,*** 48,33% of the students related the lesson with specific place (s) to memorize it.

Concerning active reading techniques:

- 53,33% asserted that they highlighted the important words/phrases/sentences before memorization, whereas 46,66% did not so.
- 53,33% affirmed they took notes before memorization, while 45% did not. 1,66% opted for sometimes.
- 68,33% asked questions on the lessons before memorization. The majority of these students added this phrase: "*I ask questions in my mind*". Whereas 31,66% did not.

Then, the majority of the students under investigation are aware of the

importance of highlighting, taking notes, and asking questions before memorization. However, it is good to direct their attention with mental questions but it is more effective for sustained attention and long term memory to ask questions on every sub-section of the lesson and even on every paragraph on the lesson paper.

Furthermore, as attention is an essential condition for effective memorization, students provided the following percentages of attention while revising as shown in Table 1:

Percentage of attention	N	%
10%	1	1,66%
20%	0	0%
30%	2	3,33%
40%	1	1,66%
50%	9	15%
60%	17	28,33%
70%	14	23,33%
80%	11	18,33%
90%	5	8, 33%
100%	0	0%

Table 1: Learners' percentage of Attention while Revising

28,33% affirm that they are 60% attentive while revising, whereas 23,33% opted for 70%. 18,33% of the students selected 80%. Then, the majority of the students, under investigation, are aware of the significance of attention for an effective storing and retrieval of information.

Finally, 45% of the students affirmed that they did not have any problem of memorization; however, 40% assured the opposite, and 15% opted for sometimes. Students provided the following reasons for their memorization problems reported in their own words:

- The stress: " I don't sit in my place when I revise, I have a stress"
- Forgetting:" I forget some parts of revision", "When I revise, I forget the majority of information"," I can't remember all the revision", " I can't remember some ideas and words"," I forget the first word" and " I forget dates and difficult words".
- Lesson length: "I find difficulty in reading all the lesson".
- Revision timing: "If I revise a week before the exams, I do not memorize the most of things".
- Comprehension: "Sometimes I can't understand the difficult information or words", I forget the difficult words"
- Short term Memory Storage: "I have a big problem with my memory". "I memorize very quickly and I forget very quickly".

Pedagogical Implications

From the analysis of the results, the learners under investigation need to know the merits of integrating the four skills for an effective memorization; the more senses are involved the longer the information will be stored and the more effectively it will be retrieved when needed. Besides, rehearsal and repetition are crucial for memory. The more the information is encountered, the easier it is stored. For a successful

memorization, learners need to repeat the information at least five times. First, they skim the lesson for the major ideas. Second, they scan it for certain specific information. Third, they would ask the most possible question on every subsection or paragraph, on the lesson paper and not in their heads. This will motivate them to read the lesson with curiosity and attention. Fourth, they read with taking notes and using the dictionary. Finally, they make their own notes, that is, write the summary of the lesson. Following these steps will involve learners in active reading, note taking, attentive learning and effective memorization.

The students showed an awareness of the importance of comprehension for memorization. However, they should alter their revision timing as exam eve, days or weeks before the exam are not sufficient to memorize efficiently the lessons. Their memorization strategies in relation to Oxford taxonomy lack the use of acronyms and rhyming and somehow story making. They mostly use visualization, semantic mapping, keyword method, chunking and loci.

The majority of students showed a high level of attention while revising as they opted for more than 50%. However 40% assure that they have memorization problem in addition to 15% as they found it so sometimes. The main problems are: stress, forgetting, lesson length, revision timing, comprehension, and sooner learned sooner forgotten. To solve these problems, stress management is a skill that learners should develop especially during the exam period. They also need to develop time management skills for a more efficient timing of revision. Besides, they should be aware that the mind cannot store properly information that is not understood. Finally, some students rely on comprehension alone for memorization, whereas repetition and effective reading and note taking techniques are crucial to assure effective memorization.

Conclusion

Memory is related to the storing, retaining, and retrieving of information about past experiences. It is also the ability to remember what to do in future. In fact, learners should develop an awareness of the different types of memory because information that is understood but could not be recalled is part of short term memory. Then, information has to be processed several times in order to be part of the long term memory. Learners can best develop an effective memory through recurrent practice of the new learned information, selective attention, time management and effective note taking. Besides, applying certain mnemonic devices would facilitate the link between the new learned information with images (chaining, loci), sounds (rhyming) or organization (acronyms, chunking, sentence and mapping methods). Teachers, too, need to know them in order to alter their students' ineffective memorization strategies and techniques. Oxford (1990) suggested memory strategies that every teacher and student need to gain knowledge of. Therefore, memory works best through rehearsal and the

processing of information through long term memory in order to assure its effective retrieval whenever needed.

References

Arnold, J. 1999. Visualisation: Language Learning with the mind's Eye. In Arnold, J (ED). Affect in Language Learning, pp. 260-278). Cambridge University Press.

Baddeley , A. D. 2004. The psychology of Memory (Chapter 1). In A.D. Baddeley& M.D. Kopelman and B.A(Eds)). Wilson *The* Essential *Handbook of Memory Disorders for Clinician(pp.1-13)*. John Wiley & Sons, Ltd.

Dembo, M. H. (2004). *Motivation and Learning Strategies For College Success*. Lawrence Erlbaum Associates, Inc.

Friedenberg, J. & Silverman, G. 2006. *Cognitive science : an introduction to the study of mind*. Sage Publications, Inc.

Jensen, E. 2005. *Teaching with the Brain in Mind*. Association for Supervision and Curriculum Development.

Matlin, W. M. 2003. *Cognition* (5th Ed). John Wiley &Sons. Inc.

Oxford, R. L. (1990). *Language learning Strategies: What every Teacher Should Know*. Heinle &Heinle Publishers.

Roediger, L. H. 2013. Applying Cognitive Psychology to education: Translational Educational Science. Psychological Science in the Public Interest 14(1) ; pp. 1–3.

Ruph, F. 2007. *University Learning Strategies: A Guide to Reflective Thinking*. Université du Québec en Abitibi-Témiscamingue (UQAT)

Schacter, L. D. 1999. *The Seven Sins of Memory*. American Psychologist 54 (3), pp. 183-203.

Sprenger, M. 2005. *How to teach so Students Remember*. Association for Supervision and Curriculum Development.

Sternberg , J. R & Sternberg, K. 2012. *Cognitive Psychology* (6th Ed). Wadsworth, Cengage Learning.

Williams, M,. & Burden, R. L. 1997. *Psychology for Language teachers*. Cambridge University Press.

Woolfolk, A. 2004. *Educational Psychology* (9th Ed). Pearson Education, Inc.