Man In India, 96 (10) : 3669-3679

THE EFFECTIVENESS OF USING MIND MAPPING IN THE LEARNING OF *MUHADATSAH*

Dudung Rahmat Hidayat*

The aim of this research was to describe the implementation of Arabic learning based on mind mapping. The focus is in the learning of the *Muhadatsah* course. The method used in this research was an experimental-design method with one group pretest-posttest design. The sample was 29 students of Arabic Education Department of the Indonesia University of Education (UPI) that contracted the course of *Muhadatasah* II. The data collection techniques in this study included tests, observations, interviews, and questionnaires. The result shows a significant difference between the posttest (2273, in average 78.38) and pretest (1887.5, in average 65.09). Thus, the posttest result is greater than the pretest result ($\bar{X} = 78.3 \geq 65.09$). Based on the result, it can be concluded that the use mind mapping in Arabic learning, especially *Muhadatsah* course, in the Arabic Education Department of the Indonesia University of Education (UPI), is considered effective.

Keywords: Learning, Mind Mapping, *Muhadatsah*.

INTRODUCTION

Learning (instruction) is an attempt to make students learning or an activity to give learners instructions. In other words, learning is an effort to create the conditions that enable learning activities. In another sense, learning is a planned effort to manipulate the learning resources for a process to learn in a learner's self (Sadiman, *et al.,* 1986, p. 7).

Every human being is born with much potential, including the potential of mind. However, the practice of learning is still far from optimal. This is reflected in the difficulties that arise in learning, such as difficulty in concentrating or remembering, which leads to low learning outcomes. Learning is not just limited to reading a book or listening to instructions without understanding. Mahmuddin (2009) explains that learning involves thinking that work associatively so that in learning there is a connection between information with other information. Learning is closely associated with the use of brain as the center of mental activity, ranging from the retrieval, processing, to information inference. Thus, it is a process of synergism between brain, mind, and thought to produce optimum efficiency.

Language learning reckons a big difference between the teaching of mother tongue and foreign languages. Learning the mother tongue is intended as a medium to express the needs in one unit/community, and learning a foreign language is a communication and cultural knowledge of the foreign speakers of languages (Al-Haafiz, *et al.*, 1412 H, p: 8).

* Department of Arabic Language, Faculty of Language and Linguistic, Universitas Pendidikan Indonesia, Jalan. Dr. Setiabudhi No.229, Bandung, Indonesia, *E-mail: duraat2016@gmail.com*

Naturally, foreign language is difficult to learn for users who are not native speakers. Along with the times, mastery of foreign language is always considered important, as well as with the Arabic language, which is a foreign language for the people of Indonesia. The importance is also appeared in *Muhadatsah* Course at the Department of Arabic Education. the teaching of *Muhadatsah* is considered difficult for students. Moreover, in Muhadatsah, students are required to be actively talking bt using Arabic.

In language teaching, aspect of speech, in this case *Muhadatsah*, is an important aspect that needs to be taught, trained, and exercised so that students become proficient (Jamaliah, 1988, in Ismail, 2011). Speech by using language is a major activity in human communication. Speech is also an eternal language system and very useful to convey meaning through the sounds of language. Teaching this field must necessarily be done systematically so that students can be helped to master this skill well. The use of the techniques in the teaching of speaking proficiency is based in levels and the student's own progress. There is a suitable technique implemented at the basic levels that will not be suitable to run on middle and advanced levels. This technique also should be modified based on content or material of lesson (Loga Baskaran, 1990; Ismail *et al.*, 2011: 71).

If someone has a good language competence, then he is expected to be able to communicate with others well and fluently, both orally and in writing. He is expected to be a good listener and speaker, a comprehensive readers and writers, who are skilled in everyday life. To achieve this goal, language teachers are required to teach and to educate themselves first in order to use the language properly and correctly so that they can become role models for the students that they teach. By using good and correct language, teachers can be expected to teach students to speak properly (Tarigan, 1989: 3).

Afterward, to optimize learning outcomes, learning process should employ a whole-brain approach. According to Potter (2002) in Mahmuddin (2009), when humans communicate by using words, the brain at the same time have to find, sort, formulate, tidy up, organize, connect, and make the mixture of ideas with words that already have meaning that can be understood. At the same time, these words are strung together with pictures, symbols, imagery (impression), sounds, and feelings. A set of words that do not sequentially mixed in the brain come out one after another, connected by logic, governed by grammar, and generate meaning that can be understood.

Based on the explanation, a medium of teaching is used as a solution to address problems of *Muhadatsah* teaching. Furthermore, this research also utilizes instructional media, the mind mapping technique.

REVIEW OF THE LITERATURE

Patrick and Jones (1999, p. 394) explains:

> Mind mapping represents a powerful aid for stimulating whole-brain thinking (Buzan, 1989). Often inactive It Engages the right hemisphere of the brain by emphasizing the spatial and visual language; it focuses on spurring creativity as well as logical thought patterns. Whole brain thinking has Become more desirable in today's business environment as firms must innovate to meet intense competitive pressures. Survival and growth in the marketplace demand a continuous stream of new and different products and improved processes for creating and delivering value. Integrative and creative thinking requires the process of left- and right-brain thinking to produce synergistic outcomes.

The mind mapping was first developed by Tony Buzan, a mathematician, psychologist, and brain researcher, as a special technique to record as short as possible, while appealing to the eye. Since, the mind mapping can be used in a variety of ways other than just a simple note. It is also used within the scope of education (Brinkmann, 2003, p: 26).

Selecting and using good learning media is a task of teacher. Teachers choose according to learning objectives. It is also the underlying fact to find more effective learning models in learning *Muhadatsah*. Zipp and Maher (2013, p.21) reveals:

> As educators, creating an environment that develops a students' critical thinking ability is one of our primary roles.. One teaching and learning strategy that has recently emerged in higher education as a means to support student critical thinking is the nonlinear learning technique of mind mapping. Mind mapping, with its inter-related branching links information and is suggested to support a deeper level of thinking.

Nemati (2014, p. 103) says that good teachers are teachers who chose good learning strategies. He explains:

> To be successful instructor, it is a good idea for one to be armed with now, techniques and strategies of teaching, to be able to understand the students needs and potentialities to identify the problems that the students might confront during the process of learning, to make an effort to offer practical suggestions based on his/her knowledge and experience and finally try to implement the new techniques when needed in order to make teaching and learning more effective.

Mind mapping is a tool that improves concentration. It encourages the mind to flow more smoothly. The ability to remember can be increased and creativity can be enhanced. Then, it eliminates gaps and omissions in important information and can be used to take notes, plan a project, solve problems, summarize books, improve memory, set the record for speed up learning because the lack of imagination can inhibit the effective use of mind mapping, although the development of imagination is a part of learning (Zampetakis, 2007, p. 372).

The use of mind mapping functions to develop the ability to remember in the retrieval of information, better use of the brain, and find an association between variables, then help to think creatively (Faris, 2013, p.61). Then, according to Buzan (2000) and Howitt (2009) in Dadour and El Esery (2014) mind mapping is a visual tool that can be used to generate ideas, take notes, organize ideas, and develop concepts (Dadour and El Esery, 2014, p .8).

Based on the above explanation, the general purpose of this research is to obtain a description of learning through mind mapping technique; obtain alternative models of effective learning Arabic based on mind mapping; and obtain a description of the implementation of learning Arabic based on mind mapping to learning *Muhadatsah*.

METHODS

This study employed an experimental method with the one group pretest-posttest design for seeing and knowing the results of initial and final results of each subject (Syamsudin and Damaianti 2006, p.157). The study took covered the Arabic Education Department of the Indonesia University of Education. The samples are 29 students of Arabic Education Department that entered the Course of Muhadatsah II in the academic year of 2013/2014.

The instruments used were shaped test (pretest-posttest). Data collection techniques used covered several steps. The first is *muhadatsah* skills test conducted to assess student ability before and after the treatment to know how effective the mind mapping technique is. The second is observations to observe student learning during the use of mind mapping technique. The third is interviews that were conducted to determine the direct appreciation of the respondents to this study. The fourth is the questionnaire, which was done only for experimental class, as a reference for how big the implication in Arabic rhetoric speeches in improving their *muhadatsah* is.

The data processing was done after all the data from the pretest and posttest in the experimental class and the control class. The data processing techniques performed in this study is to sort the pretest and posttest of the two groups; to calculate the average and standard deviation of both groups; to analyze the tests by looking t_o; to analyze questionnaire; to test the significance of the data (to see the significance difference of mean); to test hypotheses based on the results of the t test calculation so that the hypothesis that has been proposed is accepted or not.

RESULTS AND DISCUSSIONS

Based on the research that has been done by implementing the use of mind mapping in *Muhadatsah* teaching, the following results are obtained.

Test Results

A previous study, presented by Chion (2008), shows the possibility. There was conceptually positive impact in improving student achievement on the one hand and increasing student interest in studying scientific articles on the other side. Finally, a study conducted on a sample of 842 students from the University of Taiwan show the results have a positive impact in terms of increased interest (Abu 'Idah, *et al.*, 2014, P8).

From the descriptions, it can be proven that the use of mind mapping is said to be effective to see student test results significantly from the pretest and posttest with significant better score.

The use of mind mapping can encourage students to participate actively in learning. This is described by B. C. Madu and Ifeoma Metu (2012, p: 247):

> One of the ways to improve learning at secondary school level in an area where English language is a second language is to encourage a note taking approach that poses fewest problems associated with linguistic abilities and provides students with opportunity to participate actively in the instructional process. One of the forms of note taking in the instructional process is a type of concept map called the mind-map. A mind-map is a diagram used to represent words, ideas, tasks or other items linked to an arranged radially around a central keyword or idea and as an aid in study, organization, problem solving, decision making and writing.

It is in line with the test results that can be seen from the following table.

TABLE 1: RESULTS OF PRETEST AND POSTTEST OF MUHADATSAH

Nr	*Name*	*Pretest*	*Posttest*	*Gain*
1	T M	52.5	77.5	25
2	IM	67.5	80	12.5
3	AF	51.25	70	18.75
4	AS	61.25	75	13.75
5	FF	68.75	80	11.25
6	GR	63.75	75	11.25
7	MA	80	90	10
8	FA	55	75.5	20.5
9	IR	61.25	78	16.75
10	SW	66.25	80	13.75
11	TJ	50	70	20
12	DH	50	70	20
13	WD	62.5	79	16.5
14	AS	55	75	20
15	KL	55	76	21
16	SR	88.75	90	1.25
17	MY	78.75	88	9.25
18	AG	76.25	85	8.75
19	LK	80	89	9
20	AR	61.25	79	17.75
21	DD	96.25	98	1.75
22	YN	66.25	80	13.75
23	DW	65	78	13
24	ES	55	65	10
25	RG	51.25	65	13.75
26	CC	50	65	15
27	HY	81.25	85	3.75
28	RH	78.75	85	6.25
29	AS	58.75	70	11.25
	Total	1887.5	2273	385.5
	Average	65.09	78.38	13.29
	Percentage	65%	78%	

Tests were conducted twice. The pretest is the initial tests to determine student achievement results before using the mind mapping technique learning model in *Muhadatsah* teaching. The posttest or final test was performed after the application of mind mapping technique in *Muhadatsah*.

From the pretest and posttest, the results of the mind mapping use can be seen with changes in student achievements.

Based on the table above, it can be seen that the achievement in Muhadatsah teaching for second semester students of the Department of Arabic Education, after using mind-mapping techniques, has increased significantly, namely 78% of the value of the previous percentage of 65% with an average value increased from 65.09% to 78.38%.

The data shows the results of the hypothesis that the use of learning model with mind mapping technique is effective in *Muhadatsah* learning of student. This reinforces previous studies about the effectiveness of using mind-mapping techniques.

An explanation of the use of mind mapping for a foreign language or a second language effectively use is described in the research findings from Chularut and De Backer (2003) in Bahr and Danserau in Al-Jarf (2011) about learning English as a second language, in Al-Jarf (2011, p.5)

> in second language context, Chularut and De Backer (2003) investigated the effectiveness of concept mapping as a learning strategies. Their findings showed a statistically significant interaction of time, method of instruction and level of English proticiency for self-monitoring, self-efficacy and achievement. The concept mapping group showed significantly greater gains from pre-test to post-test than the individual study group. Students who used background knowledge, context, morphology, and dictionaries learnt words more effectively. They adapted a vocabulary web consisting of eight identical bubbles to provide students with a word map, intertwining most of the elements to clarify word meaning as essential to vocabulary instruction (Rosenbaum, 2001, when bilingual knowledge maps (BiK maps) were used as tools for learning German-English word pairs by 72 undergraduates, BiK-map learners out performed list learners on all dependent measures (Al-Jarf, 2011, p.5).

These explanations conclude that the use of mind mapping in learning *Muhadatsah* can be said to be effective; and with effective learning strategies, it can improve the performance of value or score. It also reinforces previous statements that the effective teaching strategies increase student performance in materials that can be used in the classroom (Al-Autoum and De Baz, 2007, p. 254).

Observations

From the observations, some data that can describe the conditions of *Muhadatsah* learning with the use of mind mapping obtained. Steps of the research conducted are based on mind mapping implementation procedures described by Al-Khawalidih (2007, p. 213-214) as follow.

- Teacher provides a concept.
- Students draft.
- Link understanding between variables.

Making mind mapping images are arranged with several techniques (Al-Saudany and Khitam, 2011, p: 90) as follow.

- Clarity of main idea in topic.
- Connecting main idea and sequence of topics.
- Marked with open end, which allows mind to work for new connections between ideas.

Then, *Muhadatsah* learning implementation by using mind-mapping techniques covers the following.

- Learning activities begins by explaining the steps of mind mapping techniques and examples. An example of mind mapping is as follows.

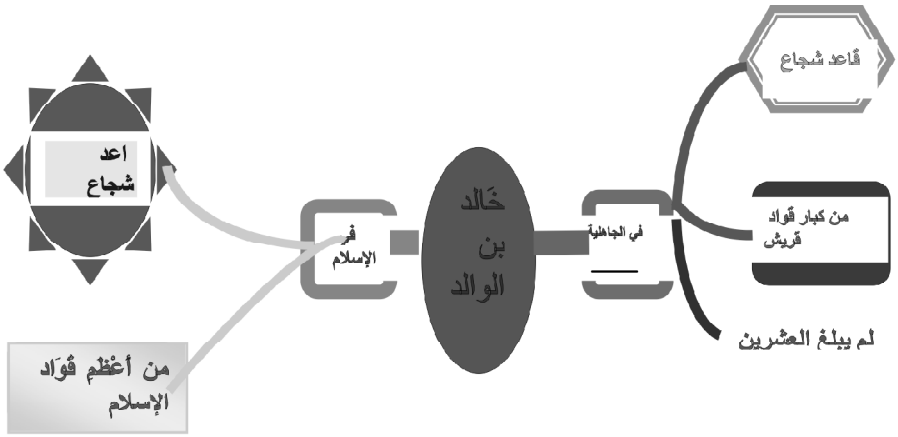

Figure 1

Mind mapping scheme is used to represent words and ideas, tasks or other items linked to and arranged around a central function of words or ideas. Then, it generates, visualizes, and builds ideas (Li'irfan, 2013, p.33). Subsequently, mind mapping describe a learning strategy where students put the super-ordinate concept on paper and then link the appropriate subordinate concept up (Al-Naqbi, 2011, p.123).

- After that, the students were asked to make mind mapping on one topic in the discussion of the *Muhadatsah* course.
- Subsequently, the students were asked to describe verbally (speaking/ *muhadatsah*) in front of a class the materials that had been created through the mind mapping technique.

The main use of mind mapping is to create an association of ideas, as outlined by Pressley *et al.* (1998) in Davies (2010, p: 281):

> The main use of mind mapping is to create an association of ideas. However, another use is for memory retention—even if the advantages in the case of mind mapping might be marginal. It is generally easier to remember a diagram than to remember a description. Others have suggested, however, that content is more central to learning than the format in which that content is presented.

Therefore, mind mapping image is formed as attractive as possible to stimulate the students in creating an idea.

Results Interviews

Based on interviews with students who enter the *Muhadatsah* class and using mind mapping technique, the application of learning with mind mapping received positive responses. It also increase student's interest to learn some vital lessons of Arabic speaking.

Of the 29 students, 80% of them enjoys learning with mind mapping techniques. They argued that they think creatively easier to enable Arabic vocabulary in their mind. It affected their power of thought and their memory, as well as simplifying the Arabic vocabulary.

The interview results add to and strengthen earlier theories that mind mapping technique is a creative learning techniques and an effective way to record information (Haurani, 2011, p.1). Further researches of the last few years confirm that both positive and negative findings of the mind mapping technique shows that mind mapping can be used in science and technology effectively (Keles, 2012, p.94). The use of this technique is in line with Syihatah (2000, p.286) in his book that the establishment of mindset emerges from stripping terms with the presentation of a few examples.

Questionnaire Results

Mind mapping is used because there are students with a wide range of diversity (Muqobalah and Al-Falahat, 2010, p: 582). Of such diversity, a questionnaire to provide further data that reinforces the results of the test was used.

The results of the questionnaire are as follow.

- Of the 29 students who answered questions about their interest in the *Muhadatsah* course by using the technique of mind mapping, 18 students like it very much (63%), 8 students like it (27%), and 3 students did not like (10%).
- Of the 29 students who answered questions about their interest in the *Muhadatsah* course by using the technique of mind mapping, 18 students are enjoying (63%), 8 student enjoys Muhadatsah (27%), and 3 students did not like Muhadatsah (10%).
- Of the 29 students who answered questions about their impression on the *Muhadatsah* course by using the technique of mind mapping, 20 students

were very impressed (69%), 7 students were impressed (25%), and 2 students were not impressed (6%).

- Of the 29 students who answered questions about the difficulty in learning Muhadatsah by using mind mapping technique, 25 students found it very easy (87%), and 3 students found it fairly easy (10%), and one student found it hard (3%).
- Of the 29 students who answered questions about whether the mind mapping technique facilitates students in learning *Muhadatsah*, 19 students expressed very correct (65%), 5 student expressed correct (17%), and 5 students expressed not correct (17%).

Based on the questionnaire results, it can be concluded that the students love the *Muhadatsah course* after learning by using mind-mapping technique; and its use in learning *Muhadatsah*, especially *Muhadatsah II*, can facilitate students to speak in Arabic.

CONCLUSION

Based on the results of data analysis, it can be concluded that there are significant differences between pretest and posttest results. These are shown by a significant increase concerning the average of pretest and posttest: the average of 65.09 for pretest and the average of 78.38 for posttest with distinguishing 13.29. From these results, it can be concluded that there are significant differences between learning Muhadatsah before using the mind-mapping technique and after using the mind-mapping techniques. This situation shows that the use of mind mapping technique is effective to be used in the *Muhadatsah* course for the students of the Department of Arabic Language Education.

Then, based on observations, tests, and interviews, it can be concluded that all students involved in learning Arabic, in particular the *muhadatsah* course, feel interested. They expect that all subjects can use this mind mapping technique.

Based on the results of the analysis, there are several suggestions that can be exposed from this research. First, teacher needs to be more active and creative to look for other learning model as a solution to the problem of learning, especially in the field of Arabic. Second, teaching media with mind mapping technique also need to be tested in other courses, besides *Muhadatsah*, and as an effort to improve other Arabic language skills.

Acknowledgement

The researcher thanks and highly appreciates all parties involved in this study, especially the lecturers and students of the Department of Arabic Education, and colleagues in the academic environment of the Indonesia University of Education, as well as all who helped and gave support in this study.

Funding

This study did not receive grants from funding agencies in the public, commercial, or any other sectors.

Notes

This study is within the scope of a foreign language learning (Arabic) and carried out in a university.

Students who become research samples are the second semester students in the academic year of 2013/2014 and have passed the courses of *Muhadatsah I*.

The study was conducted with reference to the curriculum and teaching material prevailing in the Department of Arabic Education, the Indonesia University of Education.

This research is a contribution to the advancement of learning in the Department of Arabic Education, the Indonesia University of Education.

References

Abu 'Idah, A.B and Ayub, M. (2014). Atsaru Istikhdam Thoriqoh al-Ahjiyah wa al-Kharithah al-Mafaahimiyah wa al-Syakhsiyah al-Kartuniyah fi Tahshili Tholabah Masaqi Asalib Tadris Al-Ulumi fi Jami'ah al-Najahi al-Wathaniyah. *Jami'ah*, 18 (1), 1-23.

Al-Autom, Souhair and De Baz, T. (2007). Al-Tahlil al-Fauqi lifa'aliyati Istikhdami Istirajiyati al-Kharaith al-Mafahimiyah wa Istiqsha fi Tahshili al-Thalabah fil Ulum. *Al-Majalatu Al-Ardaniyah fi Al-Ulum Al-Tarbawiyah*, 31 (3), 272-281.

Al-Hafidz, M. et al. (1412). *Madzkaratu Al-Daurat Al-Tarbawiyah Al-Qashirah*. Saudi Arabia: Universitas Imam Muhammad Su'ud Al-Islamiyah.

Al-Jarf, R. (2007). Teaching Speeling Skills with a Mind Mapping Software. *Asian EFL Journal Proffesional Teaching Articles*, 53 (-),4-16.

Al-Khawalidih, Salim. (2007). Al-Makamalah Baina Istiratijiyati Nushus al-Taghyiri al-Mafahimi wa al-Kharithati al-Mafahim al-Tanafus al-Khadwi. *Al-Majaltu Al-Ardaniyah fi Ulum Al-Tarbiyah*, 3 (3), 213-233.

Al-Naqbi, Shamma. (2011). The Use of Mind Mapping To Develeop Writing Skills in UAE schools. *Education Business and Society: Contemporary Middle Eastern Issues*, (2), 120-133.

Al-Saudany, Abd Karim and Khitam, Adnan. (2011). Fa'aliyatu Al-Tadris bil-Kharaith Al-Dzihniyah fi Tanmiyati Al-tafkir Al-Ibda'i Lidai Thalabat al-Shafi al-Awal al-Mutawasitah. *Majalatu Al-Qadisiyah fil Adabi wal Ulumi Al-Tarbawiyah*, 10 (3-4), 87-100.

B.C, Madu and Ifeoma, Metu. (2012). Effect of Mind Map as a Note-Taking Approach on Student's Achievements in Economics. *Journal of Emerging Trends in Economics and Management Sciences (JETEMS)*, 3 (3), 247-251.

Brinkmann, A. (2003). Graphical Knowledge Display-Mind Mapping and Concept Mapping as Efficient Tools in Mathematics Education. *Mathematics Education Review*, 16, 35-48.

Dadour, El-Sayed and El Esery, Ayman. (2014). Manipulating Mind-Mapping Software to Develop Essay Writing. *Research Journal of English Language and Literature (RJELAL)*, 2 (2), 6-14.

Davies, Martin. (2010). Concept Mapping, Mind Mapping and Argument Mapping: What are the Differences and do They Matter? *High Educ*. 62 (-), 279-301.

Faris, Mahmud J.B. (2013). Atsaru Istikhdam Istirajiyah Kharaith al-Aqli Fi Iktisabi al-Mafahima Tarikhiyati Wa Tanmiyat Maharati al-Tafkir al-Ibda'i Lidai Thulab al-Marhalati al-Mutawasithati Fi al-Madinati al-Munawarh. *Majalah Jamiah Islamiyah Lidirasati Al-Tarbiyati wa Nafsiyati*, 21 (4), 59-94.

Haurani, H.S.S. (2011). *Atsaru Istikhdami Istirajiyah Al-Kharaith Al-Dzihniyah fi Tahsili Tholabah Al-Shofi al-Tasi' fi Madah al-Ulum wa fi Itijahtihim Nahwu al-Ulum fil Madaris Al-Hukumiyah fi Madinah Qilqiliyah*. Tesis. Tidak dipublikasikan. Jami'ah Al-Najah Al-Wathaniyah. Palestina

Ismail, Z. et al. (2011). Teknik Pengajaran Kemahiran Bertutur Bahasa Arab di SMKA di Malaysia. *Journal of Language Studies*, 11 (12), 7-82.

Keles, Özgûl. (2012). Elementary Teachers' Views on Mind Mapping. *International Journal of Education Macrothink Institute*, 4 (1), 93-100.

Li'irfan. (2013). Tathwiru Madah Qowaid al-Lughah al-Arabiyah Abara Thariqati al-Kharithah al-Dzihniyah (*Mind Map*) fi al-Jami'ah. Al-*Baro'ah*. 4 (-), 29-45.

Mahmuddin. (2009). *Pembelajaran Berbasis Peta Pikiran (Mind Mapping)*. Available at http:/ /mahmuddin.wordpress.com/2009/12/01/pembelajaran-berbasis-peta-pikiran-mind-mapping/ [Last Accessed: Agustus 20, 2014].

Muqobalah, Nashri M and Al-Falahat, G.M. (2010). Atsaru Tadris bi Istikhdami al-Kharaith al-Mafahimiyah 'aa Tahsili Tholabah Al-Shofi Al-Tsamin Al-Asasy liqowaidi al-Lughah al-Arabiyah fi al-Ardan. *Majalat Jamiah Damasyqa*, 26 (4), 559-590.

Nemati, Azadeh , et al. (2014). The Effect of Mind Mapping Techinques on The Enchanment of Advanced Iranian EFL Learners Essay Writing Ability Through Organizing Information and Thoughts. *Indian Journal of Fundamental and Applied Life Science*, 4 (1), 96-104.

Patrick, M.A and Jones, R. (1999). Mind Mapping in Executive Education: Applications and Outcomes. *The Journal of Management Develepoment*, 18 (4), 390-416.

Sadiman, et al. (2009). *Media Pendidikan Pengertian, Pengembangan, dan Pemanfaatannya*. Jakarta: Raja Grafindo Persada.

Syamsuddin, A.R. dan Damaianti, Vismaia. (2007). *Metode Penelitian Pendidikan Bahasa*. Bandung: PT. Remaja Rosdakarya.

Syihatah, H. (2000). *Ta'lim Al-Lughah Al-Arabiyah Baina An-Nadzriyah wa At-Tathbiq.* Kairo: Dar Al-Mishriyah Al-Labaniyah.

Tarigan, G. (1989). *Pengajaran Kompetensi Bahasa.* Jakarta : Depdikbud RI.

Zampetakis, L, and Tsironis, Loukas. (2007). Creativity Development in Engineering Education: The Case of Mind Mapping. *Journal of Management Development*, Vol.26 (4), 370-380.

Zipp, Genevieve and Maher, Catherine. (2013). Prevalence of Mind Mapping as a Teaching and Learning Strategy in Phsycal Therapy Curricula. *Journal of Scholarship of Teaching and Learning.* 13 (5), 21-23.