



THE EFFECT OF BRAINSTORMING ON READING COMPREHENSION OF IRANIAN EFL LEARNERS

¹Maryam Sari Navaee, ²Masoud Asadi

^{1&2} Department of English Language, Sari Branch, Islamic Azad University, Sari, Iran

Corresponding author:

Msnava1352@gmail.com

Abstract: Reading comprehension is considered as a cognitive process. Different methods can be applied in order to make reading comprehension easier for the learners. Thus, this research aimed at finding out one of these methods which named brainstorming and its influence on Iranian EFL learners' reading comprehension. A language proficiency test was run in order to have homogenized participants. It was given to 70 students at Abrar Language Institute in Sari, Iran. Fifty students who were between 10 to 16 years of age at low intermediate level were considered homogenized. An immediate test was covered having 10 reading comprehension questions carrying out every two session at the end of each reading comprehension lesson. The last session was devoted to conduct the delayed tests including 50 questions at the end of treatment. The subjects in experimental group enjoyed being taught brainstorming technique in 10 sessions for 20 minutes at Abrar Language institute. A statistical comparison of the results indicated that experimental group improved because of the brainstorming treatment. Therefore, the null hypothesis was rejected. It was concluded that brainstorming as a pre-reading activity influences positively on EFL learners' reading comprehension

Key Words: Brainstorming, EFL learners, reading comprehension

1. Introduction

Reading comprehension is one of the main purposes of EFL/ESL teaching/ learning (Anderson & Pearson, 2004). Reading is considered as a significant life skill and the lack of reading comprehension influence the learner's academic advances. Reading comprehension, based on Razi (2010), is significant for learners who consider English as a foreign language thus there is a little chance to speak English in their daily lives. Many teaching techniques have been used to improve students' comprehension level. One of such techniques is believed to be brainstorming. Brainstorming is a technique which causes achievement and capability in reading comprehension. We cannot just rely on conventional techniques of reading instruction that involve reading text, explaining its meaning, and answering its questions. Kang (2004) believed that reading includes so many mental activities that cause students to understand the main idea of the text thus learners should employ tools which improve text comprehension.

This study is significant on following aspects: First students need techniques that enable them to have full comprehension of what they have already read. This technique can better improve students' level reading by allowing them to freely express themselves on a topic relating to given text actively in class (Al-blwi, 2006). Second this research is expected to give significance of English teaching model by managing English teaching in order to develop student reading comprehension. Teachers of foreign language usually promote classroom interaction by engaging their brains monitor their thinking and check for understanding through brainstorming. Al-maghrawy (2012) defines brainstorming as a group creativity forum for general ideas. The main assumption behind this study is that interaction in language classrooms will lead the learners to better learning and will activate their competence (Malamah-Thomes, 1987).

2. Review of the Related Literature

2.1 Reading and Reading Comprehension

There are some ways to make students to be the best readers. Based on Erten and Razi (2003), students get exposure to the target language to gain linguistic input to make language proficiency. Meanwhile to make students become the best readers, the teacher should find useful methods. According to Karakas (2002), all reading activities can be like a tool which help students' interpretation of passage and stop any possible failure in reading process. Based on Goodman (1970), reading is one of the most important skills for educational and professional success. Langer (1981) believed that reading is the most important activity in every language class not just because of source of knowledge or an interesting activity, but because of extending one's knowledge of the language. Based on Shaw (1959), reading is regarded as the communication of thought, moods, and feelings in which someone obtains from others. Nuttall (1996) defined reading as a process of getting message of the text in which the writer puts into it.

According to Bbayigit and Stainthorp (2011), reading comprehension is a complicated procedure which contains many variables. Reading comprehension requires the integration and application of multiple strategies or skills (Hamidi & Montazeri, 2014). Based on Suyanto (2010), reading comprehension is a complex intellectual process including a number of abilities. The two important abilities relate to word meaning and reasoning with verbal concepts. Based on Wray (2004), reading comprehension is regarded as an interaction between what the text provides and what the reader brings to it. Effective learning, based on Vygotsky (1978), which originates by student's activity and participation can absolutely cause their language achievement.

2.2 Schema Theory

This theory mentions that reading is an interactive act among what the reader actually knows and the new information he encounters in the text. (Sequero, 1998). Based on Bartlett (1932), schema is an active organization of past reactions on previous experience. Schema is the mental map which manages information in people's mind, so it can help the interpretation of coming information. According to Nunan (1990), schema theory is based on the idea that previous experiences result in mental frameworks to realize new experiences. Prior knowledge has been considered in many studies. Usen (1993) mentioned that if a reader is not familiar with a text, she will face difficulty in realizing it, so instructors should improve the learner's background knowledge prior to reading to achieve comprehension. Based on Usen (1993), all reading assumes that the learners have background knowledge in some extend about subject. According to Henk, Stahl, and Melnick (1993), totally it is acceptable that prior knowledge has an important effect on reading comprehension and maintaining information.

2.3 Pre-reading Activities

Pre reading activities are important factors in motivating the readers to read the text, and when they have motivation, they become prepared for reading activity (Chastain, 1988). According to Chastain (1988), the aim of pre-reading activities is to motivate the learners who like to read the assignment and to provide them to have ability to read it.

2.3.1 Pre questioning

Questioning strategy, based on Larson and Keiper (2011, p.149) is a teacher based method applied to support students as they move from lower order to higher order thinking. According to Zenger (1977) questioning is a process that an instructor asks or makes an inquiry about something and the listener answers orally ,so its purpose is to evaluate the extent of listener's knowledge, understanding, or comprehension. According to Shaunessy (2005), questioning strategy is necessary to the development of critical thinking skills, creative thinking, and upper level thinking skills.

2.3.2 Brainstorming

Based on Chia (2001), a lot of teaching methods have been used to activate learner's prior knowledge to facilitate reading comprehension. This may take the form of giving the class a particular key word or key ideas. Students are asked to call out words and ideas they personally connect to the keywords which prepared by teacher. Osborn (1953) mentioned

particular process for creative problem solving including one technique that he named it brainstorming for creative collaboration of groups. Osborn (1953) outlined four guidelines for brainstorming:

- A. criticism is ruled out. Judgment of ideas should be withheld until after the session.
- B. Freewheeling is welcomed so members are interested in sharing their wild ideas.
- C. Quantity is wanted. The more ideas members have, the better the chances they will have good ideas.
- D. Combination and improvement are sought. Members should suggest how the ideas of other participants can be turned into their ideas or how more ideas can be combined into another idea.

2.4 Related Studies

Numerous researchers have used pre reading activities as a theoretical framework to examine whether or not they improve reader comprehension of text. Meadow and Parnes (1959) compared trained subjects working in real groups using brainstorming to another native group approach calling for critical evaluation. Considerably, higher quality solutions were made in brainstorming condition. Khosravi (2000) made an attempt to examine the effect of scanning and skimming as two reading strategies on Iranian EFL students' reading rate and reading comprehension. The study showed that scanning could improve the students' both reading rate and reading comprehension.

Chularut and DeBacker (2004) investigated the impact of concept mapping on academic achievement, self-efficacy and self-regulation of students in English class as a second language. The results presented that a group of students who applied concept mapping reached higher marks in comparing with control group. Al-Olimat (2008) investigated the effect of brainstorming and discovery methods in improving creative thinking in Jordan. The finding indicated that there is an evident effect for brainstorming and discovery in developing creative thinking.

Shokrpour and Fotovatian (2009) conducted an experimental study to determine the effect of consciousness metacognitive strategies on a group of Iranian EFL students' reading comprehension. The results revealed that compared to the control group the experimental group showed an important improvement in reading comprehension at the end of treatment period. Al-khatib (2012) conducted a study to investigate the influence of applying brainstorming method in promoting creative problem solving skills through female learners in princess Alia University College. Results indicated that there were statistical important differences between the experimental group and control group in total score.

Salehi, Jahandar, and Khodabandelou (2013) aimed to research the effect of concept mapping on EFL learner's reading comprehension ability. Findings showed that there was a significant difference between the two groups. Maghsoudi and Hariran (2013) conducted a study to investigate the influence of brainstorming method on EFL students' writing performance. According to data analysis the experimental group performed better in posttest comparing to their performance in pretest. Maleki and Dabaghi (2014) investigated the influence of concept maps on improving reading comprehension of students at some high schools. Findings showed that students who received treatment performed better in reading comprehension. Ghabanchi and Behrooznia (2014) aimed to show the effect of brainstorming as a pre-reading technique on reading comprehension and also the ability of EFL learners in critical thinking. Findings indicated that students' reading comprehension ability as well as their critical thinking ability promote after employing brainstorming strategy.

2.5 Research Questions

This study was an attempt to find answers to the following research questions:

RQ1: Does brainstorming have any effect on reading comprehension of Iranian EFL learners?

RQ2: Is there any statistically significant difference between the two age groups: group 1(10-13) and group 2 (14-16)?

3. Methodology

3.1 Participants

Seventy female learners who were at low intermediate level between 10 to 16 studying at Abrar Language Institute in Sari were selected for the purpose of this research. Out of the seventy participants, fifty were considered as homogenous members after running the OPT based on one standard deviation above and below the mean.

3.2 Instruments

Oxford Placement test of Proficiency and Immediate test and Delayed test of reading comprehension were considered as measuring instruments. OPT Test was taken in order to have homogenized participants. It consisted of some parts such as structure, and vocabulary. All parts were in the form of multiple choice questions. The time allotted was 30minutes. Researcher used a sample reading of New Interchange 2 by Jack C. Richards. The book comprises 16 chapters, out of which 5 chapters were covered. Immediate-test consisted of 5 reading comprehension questions, 5 questions were added by the researcher. Immediate test which contained 10 questions was carried out every two session at the end of each reading comprehension. The allotted time was ten minutes. Then; she used the same questions as delayed-test that contained 50 questions at the end of the treatment. A pilot testing was carried out on 20 students enrolled at Sokhangostar language Institute in Sari at the beginning of the academic year at low intermediate level in order to make sure of the reliability of test. Table 3.1 below shows the reality of teacher made test.

Table 3.1 *Test/retest reliability of the reading comprehension test*

Reliability Statistics	
Cronbach's Alpha	N of Items
.958	2

According to table 3.1 above, the reliability of the reading test prepared by the teacher was .958 which shows high reliability. This test was given to the students two times (test/retest) after one week interval.

3.3 Procedure

First, the researcher selected 2 low-intermediate classes from Abrar Language Institute in Sari. Then, she gave them OPT test. About 50 students were considered homogenized. Then, the researcher divided the students into two groups, control and experimental. An immediate- delayed test was administered to both groups before and after the implementation of the proposed technique on the experimental group. Experimental group received treatment for a given period of the time. At the end of the specified period of treatment both groups received a delayed test.

4. Results and Data Analysis

In order to have homogenized participants in terms of their general English language proficiency, the Oxford Placement Test (OPT) was administered.

Table 4.1 *The Descriptive Statistics of the OPT score*

Statistics		OPT
N	Valid	70
	Missing	10
Mean		21.4714
Median		20.0000
Std. Deviation		5.10107
Variance		26.021
Minimum		11.00
Maximum		37.00

Out of the seventy participants, fifty were considered as homogenous members based on one standard deviation above and below the mean.

Table 4.2 *Test of Normality for the Reading Comprehension Scores*

	Tests of Normality					
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Cont Posttest	.150	25	.153	.920	25	.050
Exp Posttest	.121	25	.200*	.959	25	.402

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

As it can be seen in table 4.2 above, the Sig value of the Kolmogorov-Smirnov Test is higher than 0.05 for the posttest of control and experimental groups, meaning that the two sets of scores are normally distributed. Therefore, the best test for mean comparison would be the Independent t-test.

Table 4.3 *Group statistics for the two sets of scores*

Group Statistics						
ConPost		N	Mean	Std. Deviation	Std. Error Mean	
Scores Con Exp	Control	25	28.3200	7.42024	1.48405	
	Experimental	25	41.0800	2.99889	.59978	

As it can be seen in table 4.3 above, the mean and standard deviation for the control and experimental groups are 28.32, 7.42 and 41.08, 2.9 respectively.

Table 4.4 *Result of the independent t-test for the two groups*

Independent Samples Test									
			Levene's Test for Equality of Variances				t-test for Equality of Means		
			F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Scores Con Exp	Equal variances assumed		15.388	.000	7.972	48	.000	-12.76000	1.60067
	Equal variances not assumed				7.972	31.636	.000	-12.76000	1.60067

As it can be seen in table 4.4 above, the assumption of the homogeneity of variances has not been met ($F=15.38$, $p=0.071 > 0.05$). Therefore, we look at the second row to analyze the data. As table 4.4 shows, the probability of $t(31.63)$ had the sig of (.000), that is much lower than the significance level of .05 ($t(31.63)=7.92$, $p < 0.05$). Based on the results, it could be concluded that there was a significant difference between the mean scores of the two groups on the posttest of reading. The experimental group who received brainstorming technique performed better on posttest than the control group did.

Table 4.5 *Test of Normality for the Post test of Reading Comprehension*

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Age 10-13	.179	12	.200*	.914	12	.237
Age 14-16	.237	12	.061	.921	12	.290

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

As it can be seen in table 4.5 above, the Sig value of the Kolmogorov-Smirnov Test is higher than 0.05 for the two age groups in the experimental group, meaning that the two sets of scores are normally distributed

Table 4.6 *Group Statistics for the Two Age Groups*

Group Statistics						
	10-13	14-16	N	Mean	Std. Deviation	Std. Error Mean
Age Score dimension1	10-13	12	12	40.0833	2.67848	.77321
	14-16	13	13	42.0000	3.08221	.85485

As it can be seen in table 4.6 above, the mean and standard deviation for the two age groups are 40.08, 2.67 and 42.00, 3.08 respectively.

Table 4.7 Result of the Independent T-test

		Independent Samples Test						
		Levene's Test for Equality of Variances				t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Age Score	Equal variances assumed	.214	.648	1.653	23	.112	-1.91667	1.15939
	Equal variances not assumed			1.663	22.927	.110	-1.91667	1.15266

As it can be seen in table 4.7 above, the assumption of the homogeneity of variances has been met too ($F = .214$, $p = .648 > 0.05$). Therefore, we look at the first row to analyze the data. As table 4.7 shows, the probability of $t(1.65)$ had the sig of (.112), that is much higher than the significance level of .05 ($t(23) = 1.65$, $p > 0.05$). Based on the results, it could be concluded that there was not a significant difference between the mean scores of the two age groups who received the brainstorming technique. Thus, it could be concluded that the null-hypothesis which was "there is no statistically significant difference between the two age groups (10-13 and 14-16) who received brainstorming technique" was accepted, meaning that age, in this particular study, did not play any significant role.

5. Conclusion and Discussion

The ultimate objective of the study was to figure out the impact of brainstorming technique in EFL student's reading comprehension in an English language institute in Sari. It was obvious that student's reading comprehension by the help of suggested method which was brainstorming was better than the same teaching to control group who did not receive any instructions such as brainstorming. The findings showed that brainstorming had a significant role in promoting the learners' comprehension ability. In other words the mean scores of student's reading comprehension revealed significant difference between experimental and control groups. Therefore; the null hypothesis which was earlier stated is rejected according to the T value to prove that the experimental group which was exposed to pre reading activities such as brainstorming technique performed considerably much better in reading comprehension tasks than control group. The learners' performance in reading comprehension test was high due to the experiment's treatment. The t-test, statistical test administered on the findings indicated the significance of the experiment's results.

Applying the independent t-test for second hypothesis of the research revealed that age in this particular study did not play any significant role. Thus; the null hypothesis which was there is no statistically significant difference between the two age groups (10-13 and 14-16) who received brainstorming technique was accepted. Results of the study proved that preparing pre reading activities such as pre reading discussion, pre-viewing and brainstorming could be used as helpful means for language teachers and reading teachers in facilitation the students' reading comprehension ability. Based on Langer (1981), Pre reading activities such as brainstorming can improve learners' interest through helping them make mental model for text. In this research, brainstorming was regarded as a method to activate what learners know by the exchange of information to improve their knowledge of the subject. Discussion on findings indicates that pre reading activities positively influence on students' performance in reading comprehension.

References

- [1] Al-blwi, Q. (2006). *The effectiveness of using brainstorming strategy in developing creative thinking in Islamic education among third student in Tabouk City* (Unpublished master's thesis). Mmt'a University, Krak. Jordan.
- [2] Al-khatib, B. A. (2012). The effect of using brainstorming strategy in developing creative problem solving skills among female students in princess Alia University College. *American International Journal o Contemporary Research* 2 (10), 29-38.
- [3] Al-maghawry, A. (2012). Effectiveness of using the brainstorming technique to learn some basic skills and collection of knowledge for beginners in volleyball. *World Journal of Sport Sciences* 6 (4), 361-366.
- [4] Al-olimat, A. (2008). The effect of Brainstorming and Discovery in teaching Science in developing creative thinking. *Al-sharqa Humanitarian science Journal*, 5 (1), 10-22.
- [5] Anderson, C., & D. Pearson. (2004). *A schema-theories view of basic process in reading comprehension*. In P. D. Pearson (Ed.), *Handbook of reading research* (pp.255-292). New York: Longman.
- [6] Babayigit, S., & Stainthorp, R. (2011). Modeling the relationship between cognitive linguistic skills and literacy skills: New insights from a transparent orthography. *Journal of Educational Psychology*, 103 (1), 169-189.
- [7] Bartlett, F. C. (1932). *Remembering*. Cambridge: Cambridge University Press.
- [8] Chularut, P., & Debacker, T. K. (2004). The influence of concept mapping on achievement self regulation and self- efficacy in students of English as a second language. *Contemporary Educational Psychology*, 29, 248-263.
- [9] Chastain, K. (1988). *Developing second language skills: Theory and practice* (3rd ed). Chicago: HBI.
- [10] Chia, H. L. (2001). Reading activities for effective top-down processing. *Forum* 39 (1), 22-33.
- [11] Ertan, I. H., & Razi, S. (2003). *An experimental investigation into the impact of cultural schemata on reading comprehension*. Paper presented at 2nd International Balkan ELT Conference, 20-22 June 2003, Trakya University, Edirne, Turkey.
- [12] Ghabanchi, Z., & Behrooznia, S. (2014). The impact of brainstorming on reading comprehension and critical thinking ability of EFL learners. *Procedia-Social and Behavioral Sciences*, 98, 513-521.
- [13] Goodman, K. (1970). Reading: A psycholinguistic guessing game. In H. Singer & R. Ruddell (Eds.), *Theoretical models and process of reading* (pp.259-272). Newark, DE: International Reading Association.
- [14] Hamidi, H., & Montazeri, M. (2014). *Dictionary of second language acquisition*. Retrieved April 5, 2015, from <http://www.iranelt.com/index.php/introduction-to-sla>.
- [15] Henk, W. A., Stahl, N. A., & Melnick, S. A. (1993). The influence of readers' prior knowledge and level of involvement on ambiguous text interpretation: An extension study. *Reading Research and Instruction*, 32 (3), 1-12.
- [16] Kang, S. (2004). Using visual organizers to enhance EFL instruction. *ELT Journal*, 58(1), 58-66.
- [17] Karakas, M. (2002). *The effects of pre-reading activities on ELT trainee teachers' comprehension of short stories* (Unpublished master's thesis). Canakkale Onsekiz Mart University, Canakkale.
- [18] Khosravi, A. A. (2000). *The effect of scanning and skimming on the rate of and reading comprehension of Iranian EFL learners* (Unpublished master's thesis). Shiraz University, Iran.
- [19] Langer, J. A. (1981). From theory to practice: A pre-reading plan. *Reading*, 25, 152-156.
- [20] Larson, E., & Keiper, A. (2011). *Instructional strategies for middle and secondary social studies: Methods, assessments and classroom management*. New York: Routledge.
- [21] Maghsoudi, M., & Haririan, J. (2013). The impact of brainstorming strategies Iranian EFL learners' writing skill regarding their social class status. *International Journal of Language and Linguistics*, 1(1), 60-67.
- [22] Malamah, T. A. (1987). *Classroom interaction*. Oxford: Oxford University Press.
- [23] Maleki, M., & Dabaghi, A. (2014). The influences of concept mapping strategy on reading comprehension of those students challenging in studying invalid books at some high schools. *International Journal of Psychology and Behavioral Research*, 3(1), 44-54.
- [24] Meadow, A., & Parnes, S.J. (1959). Influences of brainstorming instructions and problem sequence on a creative problem solving test. *Journal of Applied Psychology*, 43 (6), 413-416.

- [25]Nunan, D. (1990). *Language teaching methodology*. USA: Prentice Hall.
- [26]Nuttal, C. (1996). *Teaching reading skills in a foreign language*. London: Heineman Educational Books.
- [27]Osborn, A. F. (1953). *Applied imagination: Principles and procedures of creative thinking*. NY: Charles Scribner's Sons.
- [28]Razi, S. (2010). *Program on the reading achievement and metacognitive strategies effects of a metacognitive reading* (Unpublished doctoral dissertation). Dokuzeylul University, Izmir.
- [29]Salehi, D. A., Jahandar, S., & Khodabandehlou, M. (2013). The impact of concept on EFL student's reading comprehension. *Indian Journal of Fundamental and Applied Life Sciences* 3 (3), 241-150.
- [30]Sequero, W. (1998). A Ready-made reading class: Warming up for reading. *English Teaching Forum*, 36 (4), 29-31.
- [31]Shaunessy, E. (2005). *Questioning strategies for teaching the gifted*. New Jersey: Routledge.
- [32]Shaw, V. N. (1959). Reading presentation and writing skills in content courses. *College Teaching*, 47, (4), 153-157.
- [33]Shokrpour, N., & Fotovatian, S. (2009). Effects of consciousness rising of metacognitive strategies on EFL students' reading comprehension. *ITL International Journal of Applied Linguistics*, 157, 75-92.
- [34]Suyanto, K. (2010). *English for young learners*. Jakarta: Bumi Aksara.
- [35]Usen, T. H. (1993). *The effects of pre reading activities on reading comprehension* (Unpublished master's thesis). Kean College, U.S., New Jersey.
- [36] Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological process*. Cambridge, MA: Harvard University Press.
- [37]Wary, D. (2004). *Teaching library: Using texts to enhance learning*. London: David Fulton Publishers. Ltd.
- [38]Zenger, S. K. , & Weldon, F. (1977). *57 ways to teach (A quick reference for teachers)*. Los Angeles, California: Crescent Publication.