The Effect of Flipped Classroom on Iranian EFL Learners' L2 Reading Comprehension: Focusing on Different Proficiency Levels

Hamideh Abaeian *

Islamic Azad University, Sepidan Branch, Sepidan, Iran

Linda Samadi

Islamic Azad University, Sepidan Branch, Sepidan, Iran

Abstract

This study investigates the effect of the flipped classroom on reading comprehension performance of Iranian EFL learners with different proficiency levels. To this end, the study carried out among 100 female EFL learners studying at two private language institutes in Shiraz. The participants were selected out of a population of around 120 based on PET proficiency test criteria as upper-intermediate and intermediate level learners. The main participants of each level of proficiency randomly were divided into experimental and control groups. Pre-test of reading comprehension was administered to all groups at the beginning of the study. Then, after 18 sessions of treatment, the post-test was given to groups. Independent-Samples t –tests were used to compare the means of the independent groups (experimental vs. control & intermediate experimental vs. upper-intermediate experimental) for the post-test. Finally, the results indicated that the experimental groups performed significantly better than the control groups. The results also showed that intermediate learners benefit from flipped technique more than upper intermediate learners.
Keywords: reading comprehension, flipped technique, language learning strategies, proficiency level

INTRODUCTION

During the last decades or so, there has been a gradual but continuous shift in how learning is accomplished in a classroom. With the advent of new pedagogical techniques, more and more faculty members are adopting the blended approach to attain and improve students' learning experience (Ragupathi, 2013; Hughes, 2012; Bonk & Graham, 2006; Friesen, 2012). The "blended learning" approach synergistically brings together the compelling aspects of online, classroom and mobile learning to enhance student's engagement and participation in a classroom and also helps attain the predetermined learning outcome measures. The "flipped classroom" is a type of blended learning approach where the onus of learning and mastering content falls back to

---

students. For these approaches, the teacher's role has gone through a metamorphosis – form being the "sage on the stage" to the "guide by the side", and classrooms are changing as well, from the traditional and passive teacher – centered learning environment to an active student- centered one with the teachers assuming the role of facilitators.

The underlying idea and approach of delivering flipped content includes developing a pre- recorded video encompassing the fundamental theoretical concepts of a particular lesson, which the students can watch outside of classroom time at their leisure to gain some idea about the topic covered in next lecture (Bishop et al., 2013). This helps the instructor by freeing up classroom time, which may be used for active learning activities such as in- class discussions, answering questions and group activities.

There is a significant knowledge gap in terms of acceptability and adaptability of the flipped classroom concept among students, and using reading strategies. This study helps to fill this gap. In fact, there is a need to investigate effects of flipped classroom approach and EFL learners' proficiency level on their reading comprehension performance in order to help them learn and use their foreign language appropriately if we are to pave the way of FLA practically and successfully. Familiarity with filliped approach and their impact on one's reading comprehension development can be worth conducting research and its results might help both EFL teachers and the learners to develop a more fruitful teaching/learning scene.

Considering the objective of the study, the following research questions and hypotheses were formulated:

- RQ1. Does flipped classroom have any effect on Iranian EFL learners' reading comprehension?
- RQ2. Does flipped classroom have any significant different effect on EFL learners' reading comprehension with different proficiency levels (intermediate & upper intermediate)?
- RQ3. If the answer to the research questions 2 is yes, which of the levels intermediate & upper intermediate) benefit more?

Based on the above questions, the following hypotheses were developed:

- H1. Flipped classroom has an effect on Iranian EFL learners' reading comprehension.
- H2. Flipped classroom has a significant different effect on Iranian EFL learners' reading comprehension with different proficiency levels.
- H3. Flipped classroom has more effect on upper intermediate than intermediate learners' reading comprehension.

LITERATURE REVIEW

In 2000, Lage et al. published a study titled "Inverting the Classroom: A Gateway to Creating an Inclusive Learning Environment." According to the study, because of

students' increase in access to multimedia and the ease of use of multimedia resources for faculty, reaching students with different learning styles is no longer limited by time constraints or at the risk of sacrificing course coverage. They outline a strategy used in two freshman-level microeconomics classes and discuss both teacher and student perceptions of the method.

The goal is to reach students with different learning styles by providing options for the students to use in learning outside of class and to increase interaction among the students and teacher inside of class through various exercises and activities. The researchers noted that this method increased the amount of responsibility placed on the student and said additional resources to aid in the study of the material were made available to students. There was also built-in support and accountability such as the availability of professors to answer questions in an Internet chat room, interactive quizzes for students to test their knowledge, and worksheets to check completion of homework. Inside the classroom students worked on experiments, labs, held discussions, and completed hands-on activities under the guidance of the instructor.

Student perceptions of the course were positive overall, and teachers reported an increase in motivation in their students using this system. The researchers gave a possible explanation for the increase in motivation being "that this type of classroom demanded that students take ownership for their learning" (Lage, et al., 2000, p. 37). The instructors noted that students were generally "more comfortable asking questions in class," possibly because of the "increase in opportunities for one-on-one interaction with the instructor" (Lage, et al., 2000, p. 37). "From the instructors' perspective, the course was considerably more stimulating to teach. In comparing this system with a traditional classroom, the researchers noted that "it may be that the inverted classroom requires lower student enrollment" (Lage, et al., 2000, p. 37). The researchers noted one of the strengths of this system being the increase of opportunity for faculty-student interaction. "This interaction is beneficial in two ways: the student is able to clear up any confusion immediately, and the instructor is able to monitor performance and comprehension" (Lage, Platt, &Treglia, 2000, p. 37).

Researchers also noted a reduction in costs long-term due to a reduction in prep-time on the part of the instructor after the course has been developed. In conclusion, of their study, Lage, et al. state the following:

New learning technologies make it possible for events such as lectures, which have traditionally taken place inside the classroom to occur outside the classroom and events, which typically occurred, outside the classroom to occur inside the classroom under the guidance of the instructor. The course format described in this article allows the instructor to present options that appeal to most learning styles while still maintaining control over course coverage and content. (2000, p. 41)

A study in 2004 by Daniel Wentland organized nine different teaching methods according to their usefulness in terms of five different classifications including Bloom's educational objectives, whether the method encouraged student or teacher oriented

activity, if it was technology based, whether it included individual or group focused activity, and if it was time-consuming or time saving. The study evaluated nine methodologies used in teaching economics including: the CPS approach, service learning, lecturing, lecturing plus, interactive (role-play), inverted classroom, technology based, case studies, and experiments, demonstrations and dramatizations. The study found that the inverted classroom met cognitive and affective objectives but not necessarily the psychomotor (hands-on) objective from Bloom's taxonomy of educational objectives. The study also concluded that the inverted classroom includes student-oriented activity, making the teacher more of a facilitator as the students take an active role in the learning environment. It also stated that the inverted classroom does not necessarily have to rely on the use of technology, but it is possible to use technology using this method. Finally, the study concluded that using the inverted classroom involved both individual and group focused activity, and classified this method as time-saving rather than time-consuming-- meaning that this method "can be utilized to communicate a lot of information in a relatively short period of time" (Wentland, 2004, p. 646).

The researcher made a point to say that the purpose of the study was not to evaluate different teaching methods against each other, but to help evaluate which teaching method(s) would work best for a particular learning situation. He emphasized that "no comparative judgment between any teaching methodologies should be attempted" (Wentland, 2004, p. 644).

METHODOLOGY

Participants

The participants in the study included 100 female EFL learners studying at Hakim and ZabaneFarda Institutes in Shiraz, Iran aged between 20 and 40. The participants were selected out of a population of around 120 by employing a proficiency test known as PET. The participants whose scores were between 567 and 633 were recognized as upper-intermediate, and those whose scores range between 432 And 566 were recognized as intermediate. As intact classes were used, they were assigned into groups. The main participants of each level of proficiency randomly were divided into experimental and control groups. Two classes were the experimental groups and the other two were the control groups.

Instrumentation

PET Proficiency Test

The initial instrument utilized in this study was the proficiency test of PET to find out about the proficiency levels of the participants for the study. This test (PET-exam) was used in order to match the participants in terms of their proficiency in all groups under investigation and to examine participants' achievement in reading comprehension before any specific instruction of flipped approach. As it was pointed out in the previous section, the PET-exam was used for choosing the learners, who were supposed to take

part in this study. This test is designed and established by the Language Center at Oxford University and consisted of about 35 multiple-choice question items which the students were asked to answer by choosing one option among three other options. The test comprised different types of items including both the components and skills of the English language.

Reading Comprehension Test (pre-test & post-test)

The participants in all experimental and control groups were administered a teacher made reading comprehension test as a pretest after their proficiency having been determined for the study based on their proficiency level (intermediate or upper-intermediate).

Reading Comprehension Test for Intermediate Groups

This test had 40 items (10 True/False items, 10 Matching items, 10 Multiple Choice items and 10 Fill-in-the Blank items) based on KhateSefid's workbook written by NematiMoghadam and Pasandideh (2011) which was developed by the researcher at two different levels. One point was allocated to each correct response that was answered by the participants correctly. The final point calculated by dividing the total number of correct items by two. So the maximum possible score of these exams was 20. The test was first piloted and then given to the 30 participants that were selected after the pre-test of language proficiency. The reliability of this tests calculated based on KR-21 formula as which is an acceptable reliability and its content validity confirmed by five professional teachers at Ph.D. level in the institute. This test took around 40 minutes for the learners to answer. Following the fifteen-session treatment based on an appropriate lesson plan, the same reading comprehension test was used as the posttest of the study. The reliability of the test then was calculated as 0.87 based on KR-21 method, which is an acceptable reliability.

Reading Comprehension Test for Upper-intermediate Groups

In order to evaluate the upper-intermediate participants' reading comprehension, they were given a 30-item reading comprehension test for both pre-test and post-test. After being revised by the researcher and two qualified English professors, the test was first piloted and then given to the 30 participants selected after the pre-test of language proficiency. The reading comprehension test was piloted among 30 students with the same characteristics (age, gender, level) for the purpose of calculating the reliability of the test. The reliability of the test then was calculated as 0.81 based on KR-21 method, which is an acceptable reliability.

Procedure

The entire study took 10 weeks. The total sessions of the study were 21 sessions (two days a week). One session was devoted to PET proficiency test, one to pre-test, and one to post-test and finally18 sessions were devoted to treatment of the study. The proficiency test was administered in the first session. The pre-test was administered in

the second session and in the last session the post-test was administered (which was the same as the pre-test). The present study was accomplished during the course of the participants' regular schedule and each session took one and a half hour. The role of teacher in the devoted time to the reading comprehension (45 minutes) was to teach the reading passages to all four groups in the same way (i.e., words, structures, pronunciation, etc.).

The control group did not receive any treatment. Instead, they received the same instruction and materials except explicit teaching of flipped techniques. The instruction in the control groups followed traditional way of (non- flipped) reading instruction Following nine weeks of treatment (for 18 sessions), the posttest, which was the same as pretest, was administered to both the experimental and control groups in order to see if there was any significant difference between the groups regarding their reading comprehension. It is worth mentioning that the control group typically took the same pretest and posttest as the experimental group did, but did not have the same treatment between the tests.

Experimental groups received their related treatments additionally. Hence, from the first treatment session, experimental groups were familiarized with flipped techniques througha 15- minute period and during 18 treatment sessions, they were taught how they can use critical thinking strategies as follow:

Participants of experimental groups exposed to flipped – classroom instruction, which, first and foremost, were familiarized with this instruction, secondly, were engaged with learning prior to attending class and were ensured that they fully prepared for their class.

The first step is familiarizing students with flipped – classroom instruction. The video teaching was 10 minutes or more. All the students were encouraged view the video prior to the lecture so that they could do some reading research on their own and come to class with questions that were discussed during lecture time. Students learning were obvious from their' active participation and response to teachers' questions during the actual lecture. A part of the ensuring lecture time was devoted to group activities and brainstorming, which were hallmarks of the flipped instruction. Finally, after 18 sessions of treatment, a reading test similar to the one employed as the pre-test of the study was assigned to all groups.

RESULTS

Normality Assumptions

As displayed in Table 1 the ratios of skewedness and kurtosis over their respective standard errors are within the ranges of +/- 1.6 (Field, 2009). As Table 1 indicates, the distribution of the scores on pre-test and post-test was normal.

Table 1. Normality Assumption of Pre-test and Post-test

Group	Personality		N	Skewness			Kurtosis		
			Statistic	Statistic	Std. Error	Ratio	Statistic	Std. Error	Ratio
Experimental	Intermediate	Pretest	25	-.251	.464	-0.54	-.491	.902	-0.54
		Posttest	25	.033	.464	0.07	-1.026	.902	-1.14
	Upper-intermediate	Pretest	25	-.451	.464	-0.97	-.537	.902	-0.60
		Posttest	25	-.084	.464	-0.18	-.461	.902	-0.51
Control	Intermediate	Pretest	25	-.206	.464	-0.44	-1.297	.902	-1.44
		Posttest	25	-.132	.464	-0.28	-.704	.902	-0.78
	Upper-intermediate	Pretest	25	.050	.464	0.11	-.806	.902	-0.89
		Posttest	25	.698	.464	1.50	-.025	.902	-0.03

Pretest of Reading Comprehension

As the distribution of the scores was normal a t-test was run to see if any differences existed among the groups in terms of their reading comprehension ability. As the results indicate there was not any significant difference between the experimental and control groups on the Reading comprehension test (F (.123) = .72, p > .05 (Table 3). Thus it can be concluded that the experimental and control groups enjoyed the same level of general language proficiency prior to the main study.

Table 2. Descriptive Statistics; Pretest of Reading Comprehension by Groups

Group	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Experimental	14.400	.237	13.930	14.870
Control	14.080	.237	13.610	14.550

Table 3. Descriptive Statistics; Pretest of Reading by Groups by Proficiency Levels

Group	Proficiency	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Experimental	Intermediate	14.280	.335	13.615	14.945
	Upper-intermediate	14.520	.335	13.855	15.185
Control	Intermediate	14.480	.335	13.815	15.145
	Upper-intermediate	13.680	.335	13.015	14.345

Table 4. Independent Sample T-test

		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Score	Equal variances assumed	.123	.727	.043	45	.966	.01449	.33848	-.66724	.69623
	Equal variances not assumed			.043	44.583	.966	.01449	.33887	-.66821	.69719

Testing Research Hypotheses

H1. Flipped classroom has an effect on Iranian EFL learners' reading comprehension.

As the results of the Table 5 shows the flipped technique have a significant effect on students' reading comprehension ability, thus the first null hypothesis is confirmed.

Table 5. The Results of t-test, Effects of Flipped Technique on Reading Comprehension of Experimental and Control Groups

		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Score	Equal variances assumed	.214	.645	-11.032	75	.000	-3.63333	.32934	-4.28942	-2.97725

H2. Flipped classroom has a significant different effect on Iranian EFL learners' reading comprehension with different proficiency levels.

In order to answering the second hypothesis an independent-samples t-test was run to compare two experimental groups. Based on the results displayed in Table 6, it can be concluded that the Intermediate learners had a higher mean (M = 16.920, SD = .321) on the posttest of reading than upper-intermediate group (M = 15.320, SD = .321).

Table 6. Descriptive Statistics; Posttest of Reading Groups by Proficiency Level

Group	Proficiency	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Experimental	Intermediate	16.920	.321	16.282	17.558
	Upper-intermediate	15.320	.321	14.682	15.958
Control	Intermediate	14.480	.321	13.842	15.118
	Upper-intermediate	13.440	.321	12.802	14.078

Table 7. The Results of Independent Samples Test between Experimental learners

	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	1.173	.284	3.081	45	.004	1.27	.41459	.44215	2.11220
Equal variances not assumed			3.062	40.77	.004	1.27	.41712	.43463	2.11972

The results of Table 7 indicate the intermediate learners had a significantly higher mean on the posttest of reading comprehension than upper-intermediate learners. Thus the second null-hypothesis is confirmed.

H3. Flipped classroom has more effect on upper intermediate than intermediate learners' reading comprehension.

As the results of Table 7 indicates, it can be concluded that intermediate learners benefited from flipped technique more than upper intermediate learners. So the third hypothesis is rejected.

DISCUSSION AND CONCLUSION

The present study was an attempt to investigate the effect of flipped techniques on EFL learners' reading comprehension. The study also aimed at finding if flipped techniques affect the reading comprehension by intermediates and upper-intermediates similarly.

As the results showed the flipped technique have a significant effect on students' reading comprehension ability, thus the first null hypothesis is confirmed. This primary research question was at the heart of the study, as the answer to this question will inform instructors and trainers the effect of the use of flipped teaching strategy on preserve teachers' learning outcomes. In general, prior research found that the flipped teaching strategy resulted in improvement of students' learning outcomes.

The findings of the present study revealed that explicit teaching of flipped techniques had a significant effect on intermediate and upper-intermediate EFL students' reading comprehension. These findings are in line with the findings of other researchers recorded in the literature: Schmidt (1990) argued that attention and explicit teaching are necessary for learning and Tomlin and Villa (1994) focused on the conception of attention and its effect on the second language development.

The main finding of this study is that the use of the flipped teaching strategy indeed has the potential to help teachers to improve their learning outcomes in the technology integration course. This benefit demonstrated statistically significant differences in learning outcomes between students taught by flipped and lecture-based teaching strategies, with the highest scores achieved by students in the flipped condition and the least in the lecture-based condition. The results of the present study support previous findings produced in the context of other content areas and with different population and provide empirical evidence that validates the flipped teaching strategy to improve students' learning outcomes (Sadaghiani, 2012; Sparks, 2013; Walker,2011). The results also indicated that the experimental groups had a significantly higher mean on the posttest of reading comprehension than control groups. Thus, the second null-hypothesis is confirmed, too. As the results indicated it can be concluded that the intermediate learners benefited from flipped technique more than upper intermediate learners. So the third hypothesis is rejected.

The results also, showed that flipped techniques does not have the same effect on intermediate and upper-intermediate students' reading comprehension, as intermediate participants of the study outperformed the upper-intermediate ones. One of the factors influencing language learning strategy use is FL proficiency. Various studies (e.g., Green & Oxford, 1995) have indicated different results about the role of FL

proficiency in the use of LLSs. In contrast with the results of this study some studies (e.g., Green & Oxford, 1995; Park, 1997), have found a significant and positive relationship between FL proficiency and LLSs. Nevertheless, some other studies in line with the current study (e.g., Chen, 1990) show that even highly proficient learners used fewer strategies of some kind compared to less proficient learners. Despite the preponderance of research on LLSs and FL proficiency, there is an apparent paucity of research on the predictability of FL proficiency within the Iranian EFL context with the aim of predicting FL proficiency through LLSs. The main objective of the current study was to investigate the predictability of FL proficiency through LLSs in the Iranian context.

REFERENCES

Bishop, J.L. & Veleger, M. A. (2013). The flipped classroom: A survey of the research. *American Society for Engineering Education (ASEE) National Conference Proceedings.*

Bonk, C.J. & Graham, C.R. (2006). *The Handbook of Blended Learning:* Global Perspectives. Local Designs. San Francisco: Jossey – Bass/ Pfeiffer.

Chen, A. U. (1990). *Language learning strategies*. Cambridge: University Press.

Green, J. M., & Oxford, R. L. (1995). A closer look at learning strategies, L2 Proficiency and Gender. *TESOL Quarterly, 29*(2), 261-297.

Lage, S. L. & Plat, W. N. & Treglia, T. (1995). Cognitive Strategy Instruction for Reading Comprehension: A Success for High School Freshman. *The High School Journal, 79,* 58-64.

Park, J. (1997). Flipped techniques in the English language classroom: *An international perspective. PASAA, 34,* 54-63.

Ragupathi, C. (2013). *Longman dictionary of applied linguistics*. England: Harlow, Essex,

Sadaghiani, S. (2012). *Overcoming dyslexia*. New York: Alfred A. Knopf.

Schmidt, Y. (1990). Reading writing connection for EFL college learners' literacy development. *Asian EFL Journal, 11*(1), 68-79.

Sparks, R. (2013). The acquisition of academic literacy in a second language: A longitudinal case study. *Written Communication*, *14*(1), 3-62.

Villa, R. (1994). *Content area reading: Literacy and learning across the curriculum.* New York: Longman.

Walker, Y. (2011). External variables affecting language learning strategies of Japanes EFL learners: Effects of entrance examination, years spent at college/university, and staying overseas. Unpublished master's thesis, Lancaster University, Lancaster, England.

Wentland, A. (2004), *Learner Strategies in Language Learning.* Great Britan: Prentice Hall.