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Optimizing Argumentative Text Comprehension via Inverted Classroom

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Abstract

The aim of the present study was two-fold: it intended to investigate the effects of inverted classrooms on argumentative text comprehension of Iranian intermediate EFL learners, and it sought to examine the effects of such a treatment on self-efficacy beliefs of the participants in this research. To achieve these aims, from among intermediate EFL learners in a language school in Ahvaz, 51 learners who score 30-47 on the Oxford Quick Placement Test were chosen to take part in this research. This available sample was then divided into two groups of inverted classroom group (ICG) and control group (CG). The participants sat for a pretest of argumentative text comprehension and self-efficacy. Then the ICG learners received the instructional materials via WhatsApp and studied them at home to get ready for elaboration in class, while the CG learners learned the new materials in class. After 8 weeks of experiment, posttests of argumentative text comprehension and self-efficacy were given to the learners in the two groups again. The analysis of the data through ANCOVA revealed that: (a) inverted classrooms led to significant differences in the performances of the learners on the test of argumentative text comprehension, and (b) the treatment exerted significant effects on self-efficacy of the learners. Implications of the study for language learners and teachers are presented in the final chapter of the thesis.

1. Introduction

No doubt reading comprehension is a vital skill for second language learners to acquire. The criteria involved in a reading activity are highly important to attain. There is much more need to pay attention to more prominent activities along with appropriate techniques that are designed to help achieve comprehension goals and to give EFL learners capabilities and motivation in their process of learning. An argumentative text is a text where the writer is either for or against an issue or subject, or presents the case for both sides [2]. In fact, argumentative texts include the set of strategies of an orator who addresses an audience looking to modify their judgement, get their adhesion, or make them admit a given situation or an idea [9]. Their purpose is to convince, get an adhesion, justify a way to see facts, refute interpretations about an event, or persuade the reader to change an opinion about a subject.

Teaching methods and techniques have been changed through the past decades to make the way students learn better by the use of new material. One of the developing thoughts in education is a learning model which is known as the flipped classroom or the inverted classroom. In the inverted or flipped classroom, learners are supposed to be given initial information outside of the classroom and make use of the time in class to build the base of their knowledge [6]. The flipped classroom is a teaching approach that has gained

popularity in Western countries, i.e., North American and western European countries. With increased opportunities for student-centered learning and support from the surge of worldwide mobile technology for many instructors, it has become the answer to disengagement and poor achievement in the classroom. A flipped classroom typically involves the use of technology to deliver course content or a class lecture outside the classroom, usually through electronic means, so that class time can be spent on practical application or active-learning activities.

By giving the learners freedom to learn at their own pace and allowing lectures to be viewed by the single student and not the entire class, the flipped classroom uses direct lecture instruction to encompass both the teacher-centered and student-centered electronic approaches to education at the same time [12].

The concept of self-efficacy which is known as learners' beliefs in their capabilities can help learners set higher educational goal and it has been shown that they have a better commitment to accomplishing those goals [4]. Students who believe in their abilities in the classroom (i.e. high self-efficacy) are able to rely on their own learning abilities when educational challenges are presented to them [5]. Students that possess higher self-efficacy have also been shown to perform better in their learning [21].

Research shows that flipping a course provides an opportunity for the students to have freedom in terms of learning content with the value-added component of a face-to-face active learning classroom experience and it can also be used to evaluate their own efficacy in dealing with a text. This can also be a chance to make use of flipped classroom practices to find out its possible impact on argumentative text comprehension which needs to be understood considering the conflict between the beliefs and attitudes of the writer and reader and judge the text based upon the reasoning in the texts.

What we know about the inverted classroom is largely based on some studies which has already been conducted particularly in Iranian context. More research needs to be done to identify if there is a link between students' argumentative text comprehension, self-efficacy and learning in the inverted classroom.

Although a substantial amount of research has focused on interactive and written argumentation skills [16,19], comparatively little attention has been paid to the reading and understanding of argumentative text or to the critical evaluation of the arguments it presents.

Therefore, the current study was an attempt to find out the effect of inverted classroom on argumentative text comprehension and self-efficacy of Iranian EFL learners in online classes. This study pursued to answer the following research questions:

RQ1. Is there a significant difference between Iranian intermediate EFL learners who are taught through online inverted classrooms and traditional methods in terms of their argumentative text comprehension?

RQ2. Is there a significant difference between Iranian intermediate EFL learners who are taught through online inverted classrooms and traditional methods in terms of their self-efficacy?

2. Literature Review

2.1. Flipped Classrooms and Its Effect on Learning

The utilization of innovation in the flipped class approach has been "utilized for quite a long time in certain disciplines, eminently inside the humanities" [7]. School level courses at Harvard, MIT and Stanford have utilized this showing model habitually throughout the years with reported achievement [8]. The idea is that students have first contact of new material outside of the classroom and afterward consolidate that material into class exercises the next day.The utilization of inverted classroom moved the educational, direct guidance address away from the homeroom and into a more student-friendly situation in an electronic technology.

As a relatively new teaching method that promotes student-centered active learning, the flipped classroom model is claimed to be "pedagogically sound because it serves the principles of personalized-differentiated learning, student-centered instruction, and constructivism". An increasing number of studies on the flipped classroom model demonstrate its growing popularity. The most common types of studies conducted on the flipped classroom examine students' perceptions of the model with the use of surveys or interviews to investigate students' satisfaction with the model. Studies on student perceptions about the flipped classroom model have been overwhelmingly positive, with a majority of students reporting preference and usefulness of the flipped classroom approach.

Previous research found that the flipped classroom approach offers great benefits for both the teachers and students in foreign language classrooms, because classroom time can be applied to more interactive tasks and students can learn at their own pace.

2.2. Self-efficacy and Learning

Learners who have confidence in their capacities in the class (for example high self-efficacy) can depend on their own learning capacities when instructive difficulties are introduced to them [5]. There have been various papers and exploration done on students' self-efficacy and its position in the study hall [1] recognized a complementary impact between self-efficacy and scholastic accomplishment with self-efficacy anticipating accomplishment and accomplishment as a wellspring of self-efficacy. Learners that have higher self-efficacy have likewise displayed to perform better in math and science classes [21]

2.3. Argumentative Text Comprehension

Research demonstrates that critical reading of argumentative text is important for a rich involvement in modern social and cultural life and for many concrete real-life decisions, but also immediately important for students in the large variety of text-based assignments awaiting them across the curriculum). However, empirical research on the reading of argumentative texts indicates that explicit classroom instruction is rare, that students at both secondary and tertiary level are generally not very skilled at identifying key components of argumentative structures in texts, and that students often conflate provided arguments with cases they build themselves while reading, especially when reading arguments of controversial content

2.4. Empirical Studies

Explored the effects of the flipped classroom model on the learning of Chinese undergraduate students in a college English class. With a holistic analysis of the data collected, she explored students' perceptions of the learning experiences in the flipped college English class, which lent an insight into the effects of the flipped classroom model on students' learning.

[14]. investigated the effect of implementing flipped classrooms on Iranian junior high school students' reading comprehension. The results of paired and independent samples t-tests indicated that there was a significant difference between the post-tests of the experimental and the control groups. The findings revealed that the experimental group significantly outperformed the control group on the post-test.

Shooli et al. (2020) aimed to reveal the effect of flipped classroom instruction on the achievements in macro/micro EFL writing subskills of Iranian upper intermediate students. The results indicated that the students treated with FC scored statistically higher on the macro-subskills and micro-subskills than the students who experienced conventional instruction. The statistical analysis of the quantitative data revealed that FC was an efficient means of developing writing subskills for the Iranian EFL learners. Moreover, results indicated a certain amount of pedagogical implications for teachers, learners, curriculum designers, and administrators.

[15] Examined the effects of using flipped instruction on Iranian EFL learners' speaking complexity, accuracy, and fluency (CAF). The findings of Independent Samples T-test and Paired Samples T-test revealed that there was a significant difference between the post-tests of the experimental and the control groups in the favor of the experimental group. Moreover, the findings of One-Sample T-Test showed that Iranian EFL learners had positive attitudes towards using flipped instruction for speaking classes.

The review of the studies revealed that there are a number of research studies which are concerned specifically with the inverted classroom, but it can be argued that there is a need to move beyond the pervious views and find out about its effect on argumentative text comprehension and learners' self-efficacy. The present study was thus set up to fill this gap in the body of studies on the topics of inverted classrooms, argumentative text comprehension, and self-efficacy in the literature.

3. Methodology

3.1. Research Design

This study had a quasi-experimental design [10] as random sampling was not possible in the current study, but other components of experimental research (such as pretest, posttest, treatment, placebo, experimental group, and control group) were all included in the design of the study. The independent variable in this study was the type of instruction (i.e., via inverted classroom or traditional instruction), and the dependent variables included argumentative text comprehension and self-efficacy.

3.2. Participants

The participants of the present study ($N = 51$) were intermediate EFL learners studying English in one of the language institutes in Ahvaz. They were selected from a pool of intermediate learners (118 learners) based on an Oxford Quick Placement Test (OQPT).. Their proficiency level at the institute was intermediate, but for good measure, their proficiency level was also measured by the OQPT. They ranged in age from 18 to 27, and their mother language was Persian. The participants of the study

were selected based on non-random convenience sampling as random selection of the learners in a language school was not possible for the researcher.

3.3. Instruments and Materials

The instruments which were used in the study included an OQPT, pretest and posttest of argumentative text comprehension, and a self-efficacy questionnaire. The texts and worksheets which were used to teach argumentative text comprehension were accessed from a website on argumentative texts (https://en.islcollective.com/english-esl-worksheets/search/argumentative).

3.4. Procedure

As the first step in the collection of the data for the present study, the manager of the language institute was informed so that the researcher could have permission to conduct the study in the institute. Then four of the language classes at the intermediate level were selected and assigned to the two groups of ICG and CG. The OQPT was then administered to the learners in the two groups and those whose scores were not in the 30-47 range were excluded from the study (though they were present in class and they were exposed to the testing instruments and instructional materials). The pretest of argumentative texts and the self-efficacy questionnaire were given to the learners at the beginning of the study. Then, during the 8-week instruction, the learners in the ICG received argumentative texts and instructions on how to comprehend them via WhatsApp and they had to read the materials at home and be ready to do the exercises and supplementary materials in their online classes. During the first and last two sessions, the learners received the pretest, self-efficacy questionnaire, and the posttest. The learners in the CG were exposed to similar materials, though in a different way: they were taught the reading texts in class and they were supposed to do the exercises at home, just like any other traditional class. As it was mentioned above, after the instructional period ended, the posttest of argumentative texts and the self-efficacy questionnaire were given to the learners in the two groups. The data obtained from the pretest, posttest, and questionnaire were coded (in the form of scores) and made ready for analysis by SPSS (version 26).

4. Results

A Sig. value larger than .05 for the Kolmogorov-Smirnov test shows that the assumption of normality has not been violated. In Table 4.1, it could be observed that all the Sig. values for the OQPT and all the pretests and posttests in the two groups were larger than .05, which indicates that all the distributions were normal, and the researcher could proceed with conducting the parametric statistical test required in this study. Moreover, for the ANCOVA analysis presented in the following sections, other assumptions such as the assumptions of linearity and homogeneity of regression slopes were checked and no violation of these assumptions was ensured.

Table 4.1 *Results for the Tests of Normality*

Groups	Tests	Kolmogorov-Smirnov		
		Statistic	*df*	Sig.
ICG	OQPT	.137	27	.200*
	Pretest	.141	27	.176
	Posttest	.144	27	.158
	SE Pretest	.139	27	.193
	SE Posttest	.137	27	.200*
CG	OQPT	.165	24	.091
	Pretest	.132	24	.200*
	Posttest	.154	24	.107
	SE Pretest	.089	24	.200*
	SE Posttest	.143	24	.163

Note: SE stands for self-efficacy

In order to find out whether the ICG and CG learners were at the same level of proficiency at the outset of the study, an independent-samples *t* test was conducted:

Table 4.2
Descriptive Statistics for the OQPT Scores of ICG and CG Learners

Groups	Mean	*N*	Std. Deviation	Std. Error Mean
ICG	38.92	27	4.22	.812
CG	38.41	24	4.60	.940

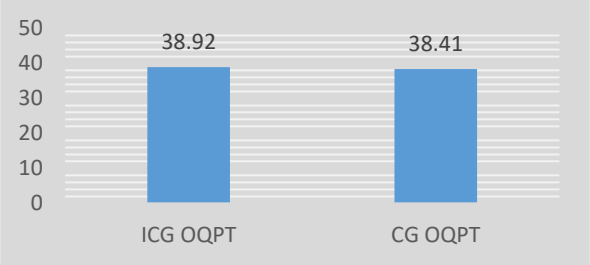
It can be seen in Table 4.2 that there was a slight difference between the OQPT scores of the learners in the ICG (M = 38.92) and CG (M = 38.41). To make sure this difference between the OQPT scores of the two groups was not statistically significant, the researcher had to consult the following *t* test table (Table 4.3):

Table 4.3
Independent-Samples t Test for the OQPT Scores of ICG and CG Learners

	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	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	.20	.64	.41	49	.68	.50	1.23	-1.97	2.99
Equal variances not assumed			.41	47.00	.68	.50	1.24	-1.99	3.00

Table 4.3 shows the fact that there was no statistically significant difference between the OQPT scores of the ICG and CG learners because the *p* value under the Sig. (2-tailed) column was found to be larger than the significance level (i.e., $p = .68 > .05$). This means that the learners in the two groups were at a similar level of proficiency before the experiment began. This result is also graphically represented in

Figure 4.1. OQPT mean scores of the ICG and CG learners



The bar chart in Figure 4.1 shows that the OQPT scores of the ICG and CG learners did not differ considerably, and that the two groups of learners were at the same proficiency level when the instruction commenced.

4.2. Testing Research Question Two

To examine whether inverted classroom had significant effects on the self-efficacy beliefs of Iranian intermediate EFL learners, one-way ANCOVA was conducted again to compare the post-instruction self-efficacy scores of the ICG and CG learners:

Table 4.6
Descriptive Statistics for the Self-efficacy Posttest Scores of ICG and CG Learners

Groups	Mean	Std. Deviation	*N*
ICG	24.85	4.34	27
CG	23.25	2.80	24
Total	23.03	3.67	51

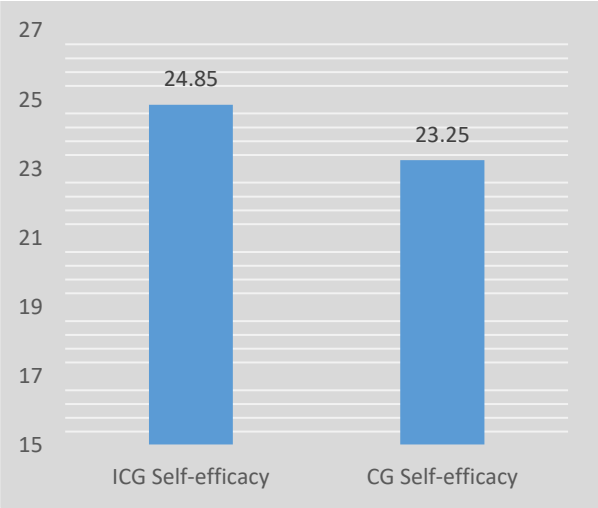
Table 4.6 demonstrates that the self-efficacy posttest mean score of the ICG learners ($M = 24.85$) was larger than the self-efficacy posttest mean score of the CG learners ($M = 23.25$). To figure out whether this difference could reach statistical significance or not, the researcher needed to examine the *p* value under the Sig. (2-tailed) column in Table 4.7:

Table 4.7
One-way ANCOVA for the Self-efficacy Posttest Scores of the ICG and CG Learners

Source	Type III Sum of Squares	*df*	Mean Square	*F*	*Sig.*	Partial Eta Squared
Corrected Model	676.54	2	338.27	580.68	.000	.96
Intercept	10.46	1	10.46	17.96	.000	.27
Pretest	643.94	1	643.94	1105.39	.000	.95
Groups	43.44	1	43.44	74.57	.488	.60
Error	27.96	48	.58			
Total	30321.00	51				
Corrected Total	704.51	50				

In Table 4.5, it could be seen that there is a significant difference between the self-efficacy posttest scores of the learners in the two groups because the *p* value was found to be lower than the .05 level of significance ($p = .000 < .05$). The bar graph below shows the self-efficacy posttest mean scores of the two groups of learners:

Figure 4.3. Self-efficacy posttest mean scores of the ICG and CG learners



As it was mentioned above, the difference between the self-efficacy posttest scores of the ICG and CG learners reached statistical significance.

5. Discussion and Conclusion

5.1. Discussion

The results of the data analysis indicated that there was a statistically significant difference between argumentative text comprehension scores of the learners in the inverted classroom group and the control group (rejecting the first null hypothesis of the study). Moreover, it was revealed that the treatment applied in this study exerted significant impacts on the self-efficacy beliefs of Iranian intermediate EFL learners (rejecting the second null hypothesis of the study).

Regarding the answer to the first research question of the study, the results are in line with previous research findings on flipped instruction and its effects and L2 skills and components. As a case in point, Wei (2019) showed in her study that inverted/flipped classrooms had significant impacts on learning of English by Chinese speakers. She found that the flipped learning tasks prepared students for the active learning in class. She found that the students perceived improved learning in the active learning environment in class. Besides, they perceived enhanced autonomy in learning, improvement in their English listening and speaking proficiency, and opportunities for cultivating higher order thinking skills.

Moreover, the present findings lend further support to those of [15] who examined the effect of flipped classrooms on high school students' reading comprehension, and found that there was a significant difference between the posttests of the experimental and the control groups, leading to the conclusion that flipped instruction had significant effects on high school students' reading comprehension outperformed the control group on the post-test.

The findings of this study are also compatible with those of a study conducted by [22]. They investigated the effect of flipped instruction on the improvements of L2 macro/micro writing subskills of Iranian upper-intermediate students, and found that flipped classroom was an efficient means of developing writing subskills for the Iranian EFL learners

In a more recent study, [15] explored the effect of flipping a classroom on Iranian EFL learners' speaking complexity, accuracy, and fluency. The results of their study revealed that there was a significant difference between the posttests of the experimental and the control groups in the favor of the experimental group, insinuating the effectiveness of inverted classrooms. They also found that their participants had positive attitudes towards using flipped instruction for speaking classes.

The findings of the above-mentioned studies all point to the fact that the current study corroborated much of previous research findings, showing the effectiveness of inverted instruction. Regarding the studies on argumentative text comprehension, [12] used a reading intervention project and examined its effects on argumentative reading and writing. This researcher found the employed treatment significantly effective for writing, but not for reading of argumentative texts. Nonetheless, the results of the present study showed that inverted classrooms can have significant effects on argumentative text comprehension.

Regarding the second research question, self-efficacy is correlated, is influenced by, and influences a large number of variables related to teaching and learning. In the same vein, the results of the current study revealed that the method of instruction (i.e., inverted classroom vs. traditional instruction) exerted significant effects on EFL learners' self-efficacy.

These results could resemble the ones by study, in which 100 participants joined the experiment and the Foreign Language Learning Anxiety Scale and the Self-Efficacy Scale were administered to them. The results showed that both aspects are correlated but gender plays no important role in terms of the anxiety level and self-perception ratings of these junior teacher trainees.

5.2. Conclusions and Implications

The present study was designed to examine the effects of inverted classroom and traditional classes on the comprehension of argumentative texts and on self-efficacy of Iranian intermediate EFL learners. The results of data analysis resulted in two

major conclusions drawn from the study. Firstly, it was revealed that flipped instruction led to significantly better comprehension of argumentative texts. There have been many studies in the literature that confirm the positive effects of flipped instruction on different language skills and subskills.

Secondly, the results of data analysis comparing the effectiveness inverted and traditional classes for self-efficacy revealed that there was a significant difference between these two methods of instruction. In other words, learners in both of the conditions had similar levels of self-efficacy.

In sum, flipped instruction, as a popular method of instruction, was shown to be effective for argumentative text comprehension, as it has been shown to be effective for many other language skills and components. Also, this study shed light on the reality that self-efficacy could also be affected by the methods of instruction employed in this experiment just as it has relationships with a lot of other traits pertinent to language learning and teaching.

The findings of the present study have implications for EFL learners, teachers, and materials developers in the realms of EFL and ESL teaching in particular and education in general. It helps teachers in accomplishing their challenging task of teaching reading comprehension in general, and argumentative text comprehension in particular, more effectively in various EFL contexts such as Iranian language schools where learners have less exposure to language compared to ESL contexts.

EFL learners must know that technology-enhanced methods such as inverted classes are versatile ways for teaching and learning different language skills and areas of language such reading and writing. The contribution of technology should be fully realized by EFL learners to alleviate their L2 learning difficulties. Students will be able to not only develop communication skills but also exchange ideas and gain other benefits from their interactions in their collaborative learning environment of such platforms. Integration of new technologies in education will improve students' classroom engagement and increase their academic achievements.

Moreover, EFL teachers and materials developers are highly recommended to integrate technology-enhanced language learning tools such as inverted classes into their EFL classrooms and materials. It is high time technology received more serious attention from all practitioners and policy-makers in educational and language teaching circles. The Covid-19 pandemic changed the normal teaching environment conditions allowing teaching activities to move from offline to online, from teaching face to face to online and from students' learning from classroom to autonomous learning where students can take control of their learning by learning independently. The use of online opportunities will help generate excitement and enthusiasm towards learning, mainly when it caters to difficult learning situations.

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