

## The Impact of Divergent and Convergent Tasks on Iranian EFL Students' Reading Comprehension Success

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**Abstract.** This study was an attempt to investigate the effect of divergent and convergent tasks on intermediate EFL students' reading comprehension success. The participants of this study involved sixty male and female EFL learners who were enrolled in the intermediate level at the Kish English Institute in Yasuj. To make them homogeneous in terms of their general English knowledge, they were asked to take part in an English proficiency test. Having been homogenized through an OPT test, sixty students were selected and randomly divided into a control and two experimental groups. Then, a pretest was run, and participants' reading comprehension was assessed. For the treatment,

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during eight sessions, the participants in the experimental groups were instructed on convergent and divergent tasks. The control group, on the other hand, received a traditional reading instruction. Finally, as the last step of data collection, all participants of the experimental and control groups took part in a post-test of reading comprehension. After applying statistical analyses, significant differences were observed among EFL learners' performances, and those who had divergent tasks could improve their reading comprehension better than the other two groups.

**Keywords:** Convergent task, divergent task, EFL learners, reading comprehension

## 1. Introduction

There has always been much concern and discussion on tasks and task types in the process of foreign language learning and teaching. It also has been a controversial issue because teachers' attitudes towards tasks and different types of tasks they can use differ depending on the teaching approach they accept. Two of the task types which can be used in language classes are divergent and convergent ones.

Among all language skills, reading comprehension is under the focus in the present study. Reading can be seen as an 'interactive' process between a reader and a text which leads to automaticity or reading fluency. In this process, the reader interacts dynamically with the text as he/she tries to elicit the meaning and where various kinds of knowledge are being used: linguistic or systemic knowledge (through bottom-up processing) as well as schematic knowledge (through top-down processing). In the process of second language acquisition, this skill must be paid special attention to. Teachers as the basic source of information and knowledge in the classroom should do their best to promote learners' skill regarding this significant skill. In task-based learning, the tasks are essential in the learning process. Task-based instruction generally is based on the principle that learners may study more efficiently when their minds are focused on the task, rather than on the language they are using.

The purpose of the current study was to seek the effectiveness of instruction through divergent and convergent tasks on Iranian EFL students' reading comprehension, and also it was an attempt to investigate

whether divergent or convergent tasks could better improve EFL learners' reading comprehension.

## 2. Literature Review

The view of reading as a process of decoding information has been affected by a large number of studies that were conducted over the last three decades. As Carrell and Eisterhold (1983) stated, EFL/ESL reading theory has been influenced during the past decades by Goodman(1983) (from the mid-to late 1970s) who viewed reading as a 'guessing game' in which the "reader reconstructs, as best as he can, a message which has been encoded by a writer" (p. 554). Moreover, research and practice in TESOL was greatly influenced by Stephen Krashen's(1982) hypothesis on language acquisition, and particularly the effect of 'the Schema Theory' on studies dealing with reading comprehension (Alyousef, 2005). Today, a developing body of empirical research confirms the role of schemata in EFL/ESL reading comprehension. Most important of all, specific attention is given to interactive approaches to reading, which argue that reading comprehension is a combination of identification and interpretation skills. The core concept of Tasked-Based Language Teaching (TBLT) is the task. The definition of a task has evolved over the last 20 years through experimental research in classroom implementation. There are different definitions based on everything from the real world to pedagogical perspectives of tasks.

For most people all around the world, reading is by far the most important skill among the four language skills that should be enhanced not only in the first language but also second. A large number of different textbook materials and other reading sources like magazines, journals, and newspapers, signify the fact that reading is more significant as the other three language skills. In fact, by positive achievement in the reading skill, the other three language skills can be fostered. Moreover, future educational opportunities depend on success in reading comprehension. Every day in our life, we come to the idea that reading is by far a less-paid skill that is a real need in every social setting interaction. Lots of articles, papers and books are written in the world, each

considering one aspect of this skill to pave the way for ESL/EFL learners and teachers (Shahtalebi & Zarei, 2010).

Marashi and Tahan-Shizari (2014) did an interesting empirical study. The study was an attempt to investigate the comparative impact of convergent and divergent condition tasks on EFL learners' writing and motivation. Sixty female intermediate EFL learners were selected from among a total number of 90 through their performance on a sample piloted PET and further homogenized in terms of their writing and motivation. Based on the results, the students were randomly assigned to two experimental groups with 30 participants in each. Both groups underwent the same amount of teaching time during 18 sessions of treatment which included using divergent tasks for the first group and convergent tasks for the second. A posttest (the writing section of another sample PET) and Gardner's Attitude and Motivation Test Battery (used also earlier for the homogenization) were administered at the end of the treatment to both groups and their mean scores on the test were compared through independent samples t-tests.

TBLT focuses on the use of authentic language and on asking students to do meaningful activities using the target language with the tasks serving as the core unit of planning and instruction in language teaching (Richards & Rodgers, 2001). There are indeed numerous types of tasks within TBLT, the application of which is usually determined by interactive conditional factors (Robinson, 2005); one such typology is convergent/divergent tasks derived from concepts of knowledge formation.

Convergent tasks are defined as those tasks "that require true justified knowledge, abstract conceptualization, and active experimentation. They allow for collaboration in meaning negotiation of where a single goal is needed; thus, collaborative work is required" (Skehan, 2001, p. 49). Such tasks should prompt "only one correct answer, allow collaborative work with short answers of which are not highly cognitively demanding, and so require no reference making" (Astika, 2004, p. 30). Convergent tasks encourage learners to reach a consensus in order for a reasonable solution to be produced (Wegerif, Mercer, & Dawes, 1999). Furthermore, students work interdependently and need to inter-

act and communicate in a manner that necessitates more negotiation and interaction (Cropley, 2006). Contrary to convergent tasks, divergent tasks are those that require new significant knowledge and have various outcome options with possibly more than one goal (Hommel, 2011). “These types of tasks allow independent works which individuals can perform differently according to their cognitive styles and which might lead to different outcomes” (Swan, 2005, p. 382). Questioning in divergent tasks enables students to raise questions with more than one correct answer. In such a situation, there is no correct answer or answers as the possible responses depend on one’s point of view or experience (Nielsen, Bayard, Pickett, & Simonton, 2008). Duff (1986) stated that in convergent condition tasks, pairs of learners are asked to solve a given problem together to agree on a justifiable solution to it. While in divergent condition tasks, pairs of learners are asked to cover a broad range of topics and operations and they are assigned different viewpoints on an issue, and they are asked to defend the given position and refute their partner’s with as many arguments as possible.

### **3. Research Questions and Hypotheses**

Based on what stated above, the present research aimed at finding the effect of divergent and convergent tasks on EFL intermediate students’ reading comprehension success. More specifically, the following questions are to be answered:

- 1) Do divergent/convergent tasks improve Iranian EFL students’ reading comprehension?
- 2) Which task, divergent or convergent, could lead to a better reading comprehension performance for Iranian EFL students at the intermediate level?

#### **3.1 Participants**

This study involved sixty eight male and female EFL learners who were enrolled in the intermediate level of Kish English institute in Yasuj. At first, this number of students was selected to take part in the study, but later eight were removed because as the obtained results in Table 1 in-

dicade, the minimum score received by the participants was 11, and the maximum score was sixty six. The standard deviation was 13.55, and the mean was 38.3. For the present study, those who obtained between one standard deviation above and below the mean were selected as the participants. Therefore, sixty remained as the participants. They were all selected from the same intermediate level of language proficiency at the institute. The purpose of having subjects from the same level of proficiency was to be certain that the results were not affected by differences in their linguistic background. Learners were also the same in terms of their age which ranged from sixteen to eighteen. The learners were randomly selected as the participants for the present study from three classes. Their native language was Persian. They had the same years of exposure to English, and the way (audio-lingual) they had learned English was also the same.

### **3.2 Instruments**

For the purpose of data collection, a number of instruments were utilized as mentioned below:

#### **3.2.1 Oxford Placement Test (OPT)**

Oxford Placement Test was used to measure test takers' language ability so that the scores from the test could be used to make accurate placement decisions in a language program. The validation process for the design phase of the Oxford Placement Test began with an extensive program of research. The initial phases involved an analysis to determine what content might need to appear on the test.

Previously, item and test analyses were performed based on a pretesting stage that involved approximately 10,000 students from 42 countries. Thus, it was shown to enjoy a high level of reliability and validity. The format of the test was multiple choice, completion and cloze test. The participants were required to answer the questions in eighty minutes, which is less than one minute for each item. As far as there were some limitations in terms of time, the number of items were modified according to the participants' level of proficiency, and therefore forty questions were selected for the participants to answer in thirty minutes.

### **3.2.2 Pre-test and post-test of Reading Comprehension (RC)**

In order to assess learners' knowledge regarding their proficiency in terms of reading comprehension, four reading passages were selected from Nelson proficiency test with focus on divergent and convergent tasks for the purpose of pretest. In order to figure out whether the instruction and application of divergent and convergent tasks had any effect on the reading performance of the students, the same reading passages were given to the learners in the post-test as in the pre-test.

### **3.3 Data collection procedures**

The data for this study were collected as follows. First, sixty eight participants were asked to take part in an English proficiency test. They were informed that their test scores show how well they have learned English through these years of studying. This notice was given to the participants to assess their real general knowledge of English; otherwise, they might not have answered questions carefully, and it might have affected the final results. They were also informed that there were not any penalty scores in case they would give wrong answers. The purpose of running this test was first to make the participants homogeneous. Having been homogenized by the OPT, sixty students were selected and randomly divided into three groups: one control and two experimental groups.

Then, for the purpose of measuring the participant's reading comprehension knowledge, a pretest was run. They took part in a test including four reading comprehension passages, and answered the related multiple choice questions. The pre-test reading scores were kept for further comparison and analysis with the post-test.

After that, the participants in the two experimental groups were instructed on convergent and divergent tasks for eight sessions. Divergent tasks are those that require new significant knowledge and have various outcome options with possibly more than one goal (Skehan, 2007) while convergent tasks are opinion-gap tasks that require students to agree on a solution to a problem. In different sessions, the participants were asked to express their ideas on different topics. As participants expressed their ideas, researchers wrote them on the board. It is noteworthy to know

that in sessions after their discussions, related reading comprehension passages and ten multiple-choice and five true/false and five open-ended questions were given to the students to answer. On the other hand, those participants who were in the control group received passages in traditional way of reading instruction. The same reading comprehension passages were given to the students in all groups in which vocabularies and unknown phrases were explained, and they were asked to answer related reading comprehension questions after the instruction.

Finally, as the last step of data collection, all participants of experimental and control groups took part in a post-test of reading comprehension. It was the same test the students had taken in the pre-test. The rationale for running this test was to see the effect of instruction that was given to the participants of experimental groups with divergent and convergent focus.

### **3.4. Data analysis procedures**

For analyzing the data, descriptive and inferential statistics were used. The obtained pre and post-test scores were fed into SPSS which is a statistical software. As for the descriptive statistics, means, maximum, minimum scores and standard deviations that were obtained were tabulated. Using *t*-tests, paired and independent sample, ANOVA and Scheffe test, the participants scores were compared to find whether using tasks could lead to a better reading comprehension, and secondly, which tasks, divergent or convergent, could help students' reading comprehension improvement.

## **4. Results**

In order to investigate the effect of two types of divergent and convergent tasks on Iranian EFL learners' reading comprehension success, the following statistical procedures have been carried out. First, the results of running an OPT are displayed in Table 1, considering mean, maximum, minimum and standard deviation in Table 1. As the obtained results in Table 1 indicate, the minimum score received by the participants was 11, and the maximum score was 66. The standard deviation was 13.55, and the mean was 38.3. For the present study, those who obtained between one standard deviation above and below the mean were selected



as the participants. The achieved results showed that the participants of the present study were homogenous in terms of their general English knowledge.

**Table 1.** Descriptive statistics to select the participants

<i>Test</i>	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Std-deviation</i>	<i>Mean</i>
<b>OPT</b>	68	11	66	13.55	38.3

After running the OPT, learners were classified into three groups of control and experimental randomly. Twenty students were placed in the control group, and they took traditional instruction while the same number of participants was placed in two treatment groups, and they received divergent and convergent tasks in learning reading comprehension.

#### 4.1 The result of the first research question

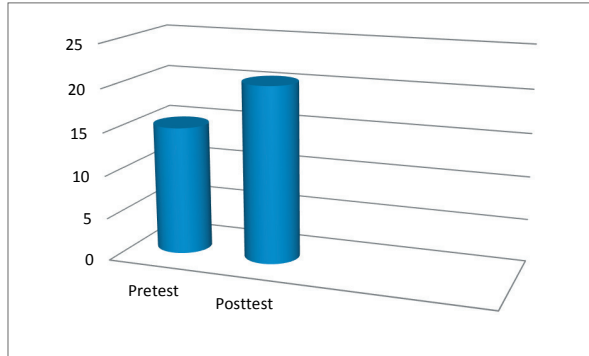
**Q1:** Do divergent/convergent tasks improve Iranian EFL students' in reading comprehension?

For answering this question, several steps were taken and the obtained results are shown in details. After collecting pretest and post-test raw scores of the two experimental groups, they were fed into the SPSS to be compared for any significant differences. The obtained results in pretest and posttest from the convergent experimental group are shown in Table 2:

**Table 2.** Descriptive statistics for convergent task in the first experimental group

<b>Method</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Min</b>	<b>Max</b>
<b>Pre</b>	20	14.96	1.978	11	17
<b>Post</b>	20	20.56	1.433	13	17

As can be seen through Table 2, there are some differences between pretest and posttest scores of convergent experimental group. In the pretest, the mean is 14.96, but in posttest it is 20.56 which is much higher.



**Figure 1.** Descriptive statistics for the comparison in pre and post-test of the convergent group

The above figure shows that learners in the convergent experimental group performed differently. To see if the difference in the pre and post-test was statistically significant, a paired sample *t*-test was run. The results are shown in Table 3.

**Table 3.** The results of the *t*-test for convergent experimental group

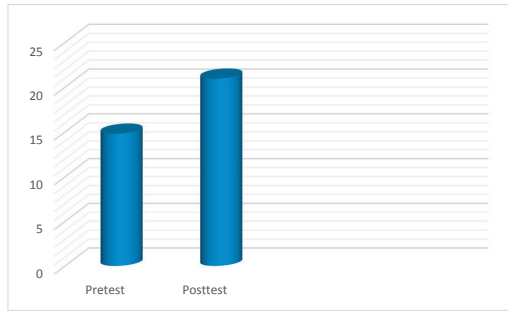
	<b>T</b>	<b>df</b>	<b>Sig(2 tailed)</b>
<b>Pre</b>	-3.531	24	.006
<b>Post</b>			

As  $p < 0.05$ , it denotes a significant difference between the pretest and posttest of the convergent group. Then, the participants' performances in the pretest and posttest of the divergent experimental group were also compared, and the results are shown in Table 4.

**Table 4.** Descriptive statistics for divergent task in the pre and post-tests

Method	N	Mean	Std. Deviation	Min	Max
<b>Pre</b>	20	14.80	1.681	11	17
<b>Post</b>	20	20.95	1.784	13	19

As can be seen in Table 4, the mean score of participants in pre-test (14.80) is less than their mean score (20.95), and it shows that divergent task has been effective. The results are also shown in Figure 2 below.

**Figure 2.** Comparison of divergent experimental group pre & post test scores

Both Table 4 and Figure 2 reveal that the mean scores of the pretest and posttest for the divergent experimental group are also different. In order to find out whether the difference is statistically significant or not, a second paired sample *t*-test was employed. Table 5 presents the results of this *t*-test.

**Table 5.** The results of the *t*-test for divergent experimental group

	T	df	Sig(2 tailed)
<b>Pre</b>	-6.820	24	.000
<b>Post</b>			

The results showed that the  $t$ -observed (-6.820) is significant at the probability level of  $p < 0.05$ , which is an indicative of a statistically significant amount of  $t$ . In other words, like convergent tasks, divergent tasks were potentially effective in their reading performance. Then, the participants' performances in the pretest and posttest of the control group were also compared and the results are shown in Table 6.

**Table 6.** Descriptive statistics for pre and post-test scores in control group

Method	N	Mean	Std. Deviation	Min	Max
Pre	20	10.22	1.548	10	20
Post	20	13.23	1.823	11	16

In order to compare the control group pre-test and post-test scores, another paired  $t$ -test was run and the following results were obtained.

**Table 7.** The results of the  $t$ -test for control group reading performance in control group

	T	df	Sig(2 tailed)
Pre	-1.693	24	.103
post			

The  $t$ -observed (-1.693) for the control group is not significant at the probability level 0.05 as  $p > 0.05$ . This shows an insignificant difference between the pre and post-test of this group. In other words, there is no improvement in their reading comprehension.

#### 4.2. The results of the second research question

**Q2:** Which one could lead to a better reading comprehension performance for Iranian EFL students at the intermediate level?

For answering this question, a one way ANOVA was run on the students' post test scores in the three groups.

**Table 8.** One-way ANOVA to compare students' post-test scores

<b>Source of variation</b>	<b>sum of squares</b>	<b>df</b>	<b>Mean square</b>	<b>F</b>	<b>Significance</b>
<b>Control</b>	18.322	2	9.432	8.878	0.001
<b>Convergent</b>	40.122	46	1.079		
<b>Divergent</b>	67.434	48	1.589		
Total	125.878				

As shown in Table 8, the obtained F value is statistically significant at the 0.05 level. This result shows that the performance of the three groups in the reading post-test was statistically significant. To locate the differences among the means, a post-hoc Scheffe test procedure was used, which yielded the following results summarized in Table 9.

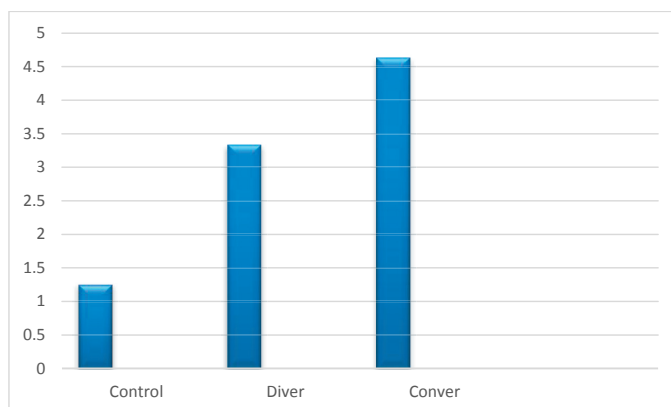
**Table 9.** Multiple comparisons of means of different groups

	<i>Mean difference</i>	<i>Std.Error</i>	<i>Sig.</i>	<i>95% Confidence Interval</i>	
				<i>Lower Bound</i>	<i>Upper Bound</i>
<i>Control</i>	<i>1.256</i>	<i>1.56307</i>	<i>.079</i>	<i>-.4012</i>	<i>7.3351</i>
<i>Experimental</i>	<i>3.336</i>	<i>1.65263</i>	<i>.87</i>	<i>-2.128</i>	<i>5.6696</i>
<i>Convergent</i>	<i>4.6333*</i>	<i>1.70727</i>	<i>.38</i>	<i>.175</i>	<i>8.0928</i>

\*. The mean difference is significant at the 0.05 level.

Table 9 shows that of all the comparisons, only the difference between the means of the convergent group on one hand and the other two groups is statistically significant, suggesting that the participants of the convergent group have outperformed their counterparts in the other groups.

There is a significant difference between convergent and divergent group which means instruction through convergent tasks was more effective in improving participants reading comprehension.



**Figure 3.** The comparison of control, divergent, and convergent groups in their post-test

According to Figure 3, convergent bar is higher than divergent and control ones. It means that convergent group's performance was better than the other two groups.

## 5. Discussion

The discussion section of this research is divided into different sections based on our research questions. In each subsection, we discuss and analyze different results obtained.

- 1) Do divergent/convergent tasks help Iranian EFL students' reading comprehension?
- 2) Which one, divergent or convergent tasks could lead to a better reading comprehension performance for Iranian EFL students at the intermediate level?

Regarding the first question of this research, descriptive analysis indicated the existence of a statistically significant difference between the pretest and posttest of the two groups' of experimental and control group individuals. In other words, results indicated that using divergent/convergent tasks affect learners' improvement in their reading ability.

Regarding the second research question, which one of tasks, divergent or convergent, could lead to a better reading comprehension performance for Iranian EFL students at the intermediate level, the obtained results of ANOVA indicated a higher level of reading comprehension considering the types of tasks used.

The results of the present study do not support Haji Pour Nezhad and Shokrpour (2012) who investigated the impact of task type and divergent thinking on 93 Iranian EFL students studying at the B.S. level at the University of Social Welfare and Rehabilitation. To begin, they evaluated participants' divergent thinking by the Torrance Divergent Thinking Test so that there were equal numbers of divergent and convergent thinkers in each. Then, they were divided into two groups of experimental and the control groups. Next, to ensure about their initial reading ability and to make them homogeneous, the two groups took the reading comprehension test. Next, they received treatment in the form of task-based instruction through either divergent or convergent tasks. At the end of the treatment, to assess the reading comprehension gains of the participants, simple factual, referential, inferential, and multiple-response items were used. They analyzed the collected data through Multivariate ANOVA. Results indicated divergent thinkers of the divergent task type group were more successful in answering referential, and multiple-response items whereas the convergent thinkers in the convergent task group's performance were better on multiple-response items. Results also showed that a task-based course of instruction through convergent or divergent tasks causes the participants to have respectively lower or higher gains in a reading test.

## 6. Conclusion

Several studies have been carried out by educators and researchers on

how task types affect EFL students' reading comprehension (Coughlan & Duff, 1994; Murphy, 2003). The search for better teaching methods led this study to investigate the use of divergent and convergent tasks on the improvement on the Iranian EFL learners' reading comprehension. Task-based instruction and application of different types of tasks in educational setting were found to be more effective than traditional approaches to foreign language teaching and learning. Task-based instruction is supported by multiplicity of theories from a variety of academic disciplines including cognitive developmental theory, social independence theory, and behavioral theory.

## 7. Pedagogical Implications

The findings of the current study indicated that there was an improvement on Iranian EFL learners' reading comprehension using convergent and divergent tasks. This can imply that tasks can be effective teaching and learning tools appropriate for learners regardless of their language proficiency levels. This provides a number of implications for learning as well as teaching. The results may be useful for syllabus designers to include more topics which lead to classroom interactions through divergent and convergent tasks. This provides an opportunity for teachers to be selective with the kind of tasks that they can use in their language classrooms. The use of tasks to teach reading can yield positive results. This implies that tasks may have the potential to be used for teaching different language skills including listening, speaking, reading and writing. The importance of tasks types, specially divergent and convergent ones as a teaching tool can be established in the present study based on empirical evidence. Teachers and curriculum designers need to devise different types of tasks and provide opportunities for EFL learners to be engaged in doing different tasks in the classroom. This study underlies the importance of task types on reading comprehension and thus calls for language teachers and practitioners to pay more attention to different type of tasks and try to broaden its use in EFL classroom



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