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The effect of interactive teaching and learning methods on the reading skills of Iranian primary school students

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Article Info

Abstract
The main purpose of this research is to investigate the effect of interactive teaching and learning on the reading skills of primary school students. The research method is quasi-experimental. For this purpose, random sampling of students from two classes, one experimental group and the other one control group (a total of 40 students) were selected as samples. To measure the variables studied in this research, a reading literacy test was used. The questions of this test are based on an informational text and were selected from the prize test, and in the second stage of implementation (pre-test and after the test) have been used. The results of the analysis showed that teaching reading in a collaborative way had a significant effect on students' comprehension skills.

Introduction
Reading skill is one of the most important learning needs of students in today's life. The ability to understand and interpret and draw conclusions from curricular and non-curricular texts introduces students to new thoughts and information to learn the way to "think better" and "live better" (Campbell, Kelly, Mullis, Martin and Sainsbury, 2001, 1). In other words, "literacy" in its scientific and comprehensive sense, is a means through which one can access the endless reserves of human experience. In fact, learning the skill of reading is the key to obtaining all learning, because most of the learning takes place that way. In order to learn other subjects such as mathematics, history, and geography, one must master reading comprehension skills (Karimi, 2004). When we consider reading is not only limited to the comprehension of verbal codes and written signs but that reading "visual signs," "electronic signs," and "digital texts" is one of the developments that are very serious and pervasive in the field of literacy, the fundamental significance of reading literacy becomes even more apparent.
The most important issue that happens in the reading process is "understanding". Comprehension is the process of making meaning and includes the interaction between the text and the reader. Without understanding, the reading process does not occur. Thus, the ability to understand, interpret and draw conclusions from academic and non-curricular texts introduces students to new ideas and information, and success. The academic progress of each student is directly related to his ability to understand (Murphy 2008, 2) classified into four levels. The International Association for the Evaluation of Academic Progress includes these four levels from the most superficial to the deepest layers of learning.
- *Focusing and Explicit Information Retrieval:* This level of successful information, retrieval requires relatively immediate or automatic comprehension of the text. This process does not require much inference and interpretation and the meaning is clearly stated in the text.

- *Direct inference:* While making meaning from the text, the readers reach inferences beyond the surface level of the text about the ideas or information that is explicitly stated in the text.
- *Interpreting and integrating ideas and information:* At this level, readers, by interpreting and integrating ideas and information obtained from the text, create connections that are not only implicit but may have been interpreted based on their point of view.
- *Examining and Evaluating the Content, Language, and Textual Elements*: At this level, while evaluating the content -language, and textual elements- the reader's attention is directed from creating meaning to carefully examining, rejecting, or accepting the text (Martin, Mullis and Kennedy 2003, 1) [7].

In this context, the International Association for the Evaluation of Educational Progress has conducted a comparative study entitled "Study 2 on the literacy of 9-year-old children among the international countries of literacy progress" (PIRLS) of the world. In most countries, this age includes fourth-grade students. The Pearls study is one of the extensive study series of this association and has been conducted since 2001 during a five-year cycle in 2001, 2006, 2011, and 2016 in most countries of the world.

As described in the framework of Perls 2001, the goals of reading and the process of students' low demand have been the basis of this study (Martin and colleagues...) so that we no longer need supplementary programs to improve student's reading skills, so the investigation and analysis of what the reasons and factors affecting the weakness of students are the responsibility of the trustees of education.

The main substructures of reading literacy have a fundamental relationship with learning to read; It should be known that our students are weak in the field of reading literacy, so how can we strengthen the reading comprehension ability in the children in the best way? And what are the new and effective ways to develop reading skills?

In this regard, in recent decades, the educational system has felt the need to revise traditional teaching methods and use new and active learning and student-centered methods. Among the many different models of teaching, cooperative learning can be mentioned. Structurally, this model is a subset of the family of social models for cooperation training.

Research Questions
1. Is group work effective in improving students' reading comprehension in Iranian 4th-grade students?
2. In reading achievement, is there a statistically significant difference between the pre-test and post-test results of the experimental and control groups?

Methodology
Participants
In this research, the statistical population was male students in the second year of Siraj Primary School in Tabriz city. The statistical sample was determined by the random sampling method. 40 students were selected and divided into two; an experimental group (20 people) and a control group (20 people).

Instruments
To measure the variables studied in this research, the reading literacy test was used. The questions of this test were set based on an informational text that included 15 questions (including multiple choice questions, short answers, and structured answers) and were prepared according to the objectives of Perles. It was implemented in two stages of the test (pre-test and post-test).

Procedure
After selecting the sample, to conduct the pre-test for the experimental group and the control group, the test was performed by both groups simultaneously under the same conditions.
To implement the interactive teaching method for the experimental groups, 8 lesson sessions were taught cooperatively for 20 months.

Findings
The current research was conducted on fourth-grade male secondary school students in District 4 of Tabriz, where the average age of the students was 9, and also the samples were selected from Siraj Boys' Primary School. According to the selection of both sample and experimental groups from the same school, all students were similar in terms of facilities and equipment, the level of education of their parents and their income, etc.

The first hypothesis of the research
The interactive teaching and learning approaches have significantly impacted the male pupils in District 4 of Tabriz City's fourth-grade development of their informative text comprehension abilities.

Table 1: Progress of the first level of reading comprehension in the post-test of the studied groups

Variables	df	mean	t	F	Average
Groups	3	0.675	0.000	96.198	402.512

According to the results of Table 1, the observed F is equal to 96.198. This means that teaching reading in a collaborative way has had a significant impact on the progress of students' reading comprehension.

Pre-test for English Reading Comprehension
Table 2 shows the result of the independent group T-test by comparing the pre-test mean scores of the two groups' reading comprehension. The mean for the experimental 68.86 and for the control group 70.15 shows that there isn't any significant difference in both groups' English reading comprehension pre-test scores.

Table 2: Independent group T-test reading comprehension pre-test scores of both group

	Experimental Group n=44		Control Group n=34				
	M	SD	M	SD	t	df	p
GEPT scores	68.86	3.81	70.15	7.12	-74	74	.458

Post-test for English reading comprehension

The results of the analyzed data for both groups are shown in table 3.

Table 3: English reading comprehension post-test scores between two groups

	Experimental Group n=40			Control Group n=34				
	M	SD	Adj. M	M	SD	Adj. M	F	η2
Final Exam	81.9	18.6	82.5	70.2	13.8	69.5	12.28**	.16

According to the mean score of the experimental group and control group there is a significant difference between groups mean scores and result indicates that instruction increased English reading comprehension performance in experimental group.

Results

The main goal of this research is to investigate the effect of collaborative teaching methods on improving the reading literacy and reading comprehension skills of secondary school students. The results of this study confirm that the students of the control group, according to the common teaching methods and the evaluation system, when studying a text and answering the questions raised, only seek to memorize the contents or directly extract information from the text, and most of them have not learned how to integrate, evaluate and organize the elements of the text in the interpretation and inference of the texts based on their creativity and intellectual reproduction, unlike the students of the experimental group who made significant progress in understanding the material using the interactive and collaborative teaching method, therefore teaching based on the collaborative method makes them able to answer such questions more easily and to interpret and evaluate the content and text.

Selection of test and control groups: random method was used in sample selection. Teaching the interactive teaching method to the teachers of the experimental groups: before the implementation of the intervention, for achieving reliable results, an expert in educational sciences taught cooperative ways of teaching to the teachers of the experimental group. In these meetings, teachers discussed in detail the concept of the cooperative teaching method, its difference from usual methods, the purpose, and importance of using this method, and the steps and implementation of this method. It is worth mentioning that the mentioned teachers had previously completed in-service training courses in the field of active teaching methods and were well versed in it and very interested in active teaching methods.

Conducting a pre-test for the experimental group and the control group: After selecting the sample, the test for both groups was performed simultaneously under the same conditions.

Implementation of interactive teaching method for the students of experimental groups: After giving the necessary training to the teachers of the experimental group and conducting the pre-test, the students of the experimental group were taught cooperatively.

Scoring the answers of the subjects, comparing the groups, and measuring the effectiveness of the collaborative teaching method: In the final stage, the tests were graded and the resulting data were averaged at the level of descriptive statistics (standard deviation) and at the inferential level (t-test to compare the means), Levine's test to examine the homogeneity of the variance of scores and analysis of covariance were analyzed.

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