The Effect of Gender Mixed Groups and Collaborative Interaction on Learners' Achievements in Reading Comprehension

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Abstract

Several studies have examined the impact of both gender mixed groups and collaborative learning on the process of language learning. Some studies found that females were better than males whereas others showed that males were better than females. As for collaborative learning, most studies have shown that this type of learning improves and accelerates the process of learning. The present study intended to investigate (1) the effect of gender mixed groups on learners' interaction in reading comprehension, and (2) the influence of collaborative learning activities on learners' achievements. In order to achieve these goals, 45 male and female high school students from Benghazi, Libya were divided into three groups. Each group included 15 students. One group (GIRLS GROUP) contained only girls; the second group (BOYS GROUP) included only boys whereas the third group (MIXED GROUP) was a mixture of both girls and boys. They were all taught by the same instructor in order to emphasize equality of teaching. The treatment lasted for five weeks, two hours a day, three days a week. Instructional tasks based on collaborative learning techniques and activities were provided to the students. A pre-test and post-test design was utilized in this study. Regarding the effectiveness of **gender mixed groups** on reading comprehension , the results revealed that Group (GIRLS GROUP) achieved the best results. For the influence of collaborative learning techniques, the findings showed remarkable development in the students' achievements when using collaborative learning.

Keywords: *collaborative learning, gender mixed groups, reading comprehension.*

المستخلص:

هدفت العديد من الدراسات الى فحص مدى تأثير المجموعات المختلطة بين الجنسين والتعلم التعاوني على عملية تعلم اللغة. وجدت بعض الدراسات أن الإناث أفضل من الذكور بينما أظهرت دراسات أخرى أن الذكور أفضل من الإناث . أما بالنسبة للتعلم التعاوني ، فقد أظهرت معظم الدراسات أن هذا النوع من التعلم يعمل على تحسين وتسريع عملية التعلم. تهدف هذه الدراسة إلى دراسة (1) تأثير المجموعات المختلطة بين الجنسين على فهم القراءة (2) تأثير أنشطة التعلم التعاوني على إنجازات المتعلمين. من أجل تحقيق هذه الأهداف، تم اختيار 45 طالب وطالبة من المرحلة الثانوية في بنغازي، ليبيا وتقسيمهم إلى ثلاث مجموعات. شملت كل مجموعة 15 طالبا. المجموعة الأولى (مجموعة الفتيات) تضم فتيات فقط؛ شملت المجموعة الثانية (مجموعة الأولاد) الأولاد فقط بينما كانت المجموعة الثالثة (مجموعة مختلطة) عبارة عن مزيج من كل من الأولاد والفتيات. تم تدريسهم جميعًا من قبل نفس المدرب. استغرقت عملية التدريس خمسة أسابيع، بمعدل ساعتين في اليوم، ثلاثة أيام في الأسبوع. تم توفير مهام تعليمية تعتمد على أساليب التعلم التعاوني والأنشطة للطلاب. اعتمدت الدراسة على استخدام اختبارات قبل وبعد التدريس من اجل جمع البيانات والنتائج. فيما يتعلق بفعالية المجموعات المختلطة بين الجنسين في فهم القراءة، كشفت النتائج أن المجموعة (مجموعة الفتيات) حققت أفضل النتائج. بالنسبة لتأثير تقنيات التعلم التعاوني، أظهرت النتائج تطوراً ملحوظاً في إنجازات الطلاب عند استخدام هذا النوع من التعلم التعاوني.

Introduction

Research studies have highlighted the importance of gender mixed groups and collaborative learning for reading comprehension demonstrating that they can improve learners' understanding of texts. For instance, a number of studies (e.g. Kayaoglu, 2012; Główka, 2014) examined the relationship between gender mix and second language learning. Such studies focused on sex-based differences in women's and men's linguistic repertoire viewing if sex can correlate with language and language learning. The results of these studies revealed that females might be better than males at learning languages because they are more open to structures in the target language. Główka's study (2014) consisted of 549 students of English from Polish state schools

and 64 foreign language teachers. The study aims at investigating the influence of gender on students' achievement in learning English in secondary and higher vocational schools in Poland, as well as teachers' and students' opinions regarding the significance of this influence. The instruments used to collect the data involved a student self-report questionnaire, a teacher self-report questionnaire, and audio recordings of interviews. The results provided ample evidence that girls achieved significantly better results than boys.

With regard to collaborative learning, it is defined as a teaching method in which small various groups of students work together to achieve a common goal (Motaei, 2014). It is considered a tool used to promote individual skills, improve relationship among students and prepare them to play roles in group activities. Its impact on second language learners has been examined. Some studies (Faust & Paulson, 1998; Zagoto, 2016) proved the positive effectiveness of utilizing collaborative learning activities in teaching and learning English as a second language. Such studies concluded that collaborative learning is a valued technique, which encourages learners for group discussion. Also, it assists making more timid students, who have not mastered all the required skills of language, to work harder and achieve more.

Based on what was mentioned earlier. This study was conducted to identify the effect of gender mixed groups on learners' interaction in reading comprehension as well as the impact of collaborative learning activities on learners' achievements. It explored the quality of the collaborative learning performance of gender-mixed groups.

The Nature of the Reading Comprehension Process

Multiple definitions offered to specify the nature of reading comprehension. Generally, reading comprehension means understanding what you read (Moore et al., 2016).

Earlier research focused on the mental processing of texts prioritizing background knowledge and experiences. Reading comprehension is viewed as a process of making meaning from a text content. Readers, therefore, aim to gain an overall understanding of the information presented in the text rather than understanding the meaning of isolated words or sentences. For Harris and Hodges (1995, p. 39), comprehension of texts involves constructing meaning of written or oral texts 'through a reciprocal, holistic interchange of ideas between the interpreter and the message'. Moreover, Carrel (1998, p.9) stated that comprehension "is the goal and purpose of reading. Without it there is no reading". Reading contains not only the recognition of printed words

but also the improvement of meaning to the words the writer intends to convey. Comprehension of the text is the core in the reading process. Reading comprehension require readers to be able to understand the purpose of the text and identify the reference in it (Philips, 2006)

In order to assist language learners to read comprehensively, effective reading comprehension strategies should be implemented inside classrooms. A number of studies (e.g. Rodríguez and Rodríguez, 2009; Navarro, 2008) suggest that utilizing some reading techniques may aid learners to interact with texts and understand and construct the meaning from the texts.

Theoretical Background of Collaborative Learning

Collaborative learning is one of the effective newline methods to cater for the needs of English language learners. According to Johnson and Smith (1998), collaborative learning is a teaching method by which students in small groups can collaborate to maximize one another's learning and to attain common purposes.

Collaborative learning signifies a major shift away from the typical teacher-centred in class-rooms. It aids learners acquire the course material better and provides chances to develop further skills (Velarde et al., 2014; Zhou et al., 2019). In addition, Dillenbourg (1999, p. 1) defined col-laborative learning as "a situation in which two or more people learn or attempt to learn some-thing together," and more specifically as joint problem solving".

Furthermore, collaborative learning requires learners to collaborate by, for instance, taking dif-ferent roles, discussion, clarification of ideas, Summarizing, and evaluation of other's thoughts.

When examining the effect of collaborative learning on the achievement of students in different language skills, most studies (e.g. Farmer, 1999; Akcan, 2000; O'Byrne (2003) revealed its posi-tive influence on the process of learning. Such studies approved the significance of using collab-orative learning activities and how they assist students in learning another language.

Earlier Research on Collaborative Reading in Libya

Research in Libyan universities revealed that lecture-based approach is used by most university teachers. The lecture approach is based on teachers' presentation of knowledge and information rather than discussing and sharing information (Safari, 2006). Most of the studies in the context confirmed that having different genders in classes hinders the use of collaborative approach that is based on the group discussions. In other words, Libyan universities are gender mixed and the cultural limits hinder girls and boys from joint discussions in the classroom (Elabaar 2011,

Sawani, 2009). This study adds to a growing body of literature showing the effect of Libyan gender mixed groups and collaborative learning activities on learners' achievements in reading comprehension.

Methodology

The participants in this study were 45 high school students from Benghazi, Libya. The students were divided into three groups, 15 students in each. One group (GIRLS GROUP) contained only girls; the second group (BOYS GROUP) included only boys whereas the third group (MIXED GROUP) was a mixture of both girls and boys. They were all taught by the same instructor in order to emphasize equality of teaching. The treatment lasted for five weeks. The time of instruction was two hours a day, three days a week. Instructional tasks and activities based on collaborative learning were provided to the students by the instructor.

Course Details

The instruments used to collect data were pre-test and post-test design. Before conducting the treatment, a reading comprehension test (pretest) was distributed to 60 students to determine their overall language proficiency level . Only 45 students were chosen as their test scores were very close and the test scores served to ascertain a baseline for all groups. They were divided into 3 groups, each of which contained 15 students. After 5 weeks of teaching, the same test was given (posttest). According to Moreira et al. (2019), the same type of test can be used for retrieving practice. Hence, the multiple-choice task in both tests was similar (two versions with the order counterbalanced), so that the instructor ensured that the same test format was used and that the student who had version (1) in the pretest had version (2) in posttest. In other words, each student received two different versions of each test.

Besides, in order to ensure that the test items have good reliability, they had undergone an item analysis. Item analysis is a process used to assess the quality of test items. (KarKal, 2016).

In the process of teaching, the instructor followed collaborative learning activities where brainstorming and predicting of topics main ideas were utilized before each lesson. During teaching, the instructor asked the students to use the technique of guessing the meaning of vocabulary and discuss within the group. After finishing each lesson, the students were asked to identify the

most vital ideas as well as asking for the summary of the passages and knowledge gained from them. In each lesson, the instructor made the students interact and discuss within the groups, among the groups during their activity practice in order for students to exchange their thoughts in the classroom.

Findings

As mentioned earlier in this paper, the present study was conducted in order to achieve the following objectives:

1. To study the effectiveness of gender mixed groups on learners' interaction in reading comprehension.
2. To examine the influence of collaborative learning activities on learners' achievements

To analyse the data, the Statistical Package for Social Sciences (SPSS) software was used. The results are as follows:

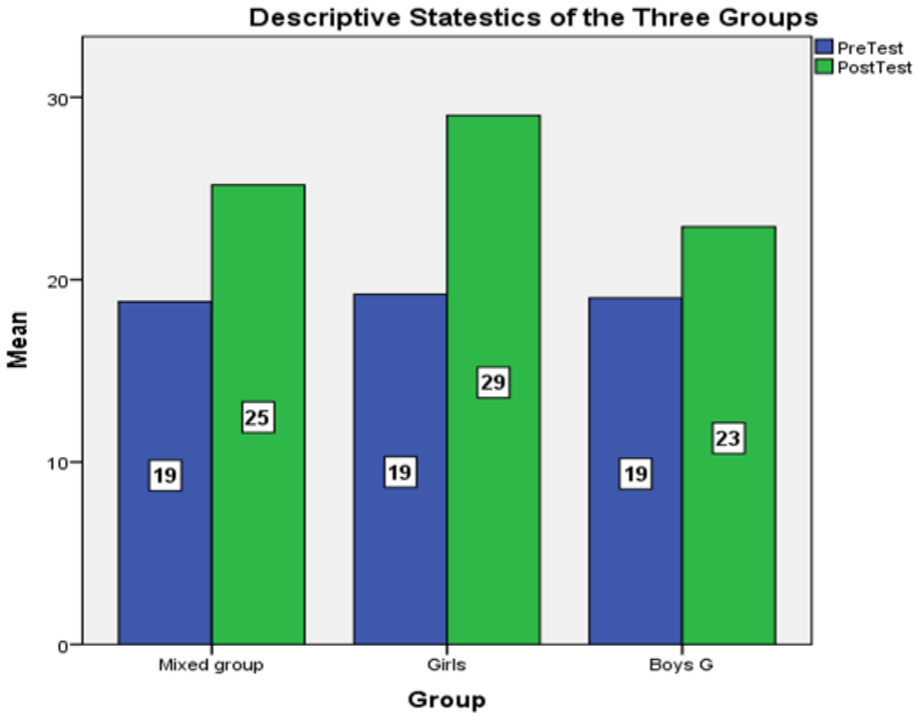
Descriptive Statistics

The descriptive statistics (table 1) revealed that although the three groups improved from pre-test to post-test, the treatment group (GIRLS GROUP) outperformed the other two groups.

Table 1. Number of Students, Mean Scores, Standard Deviations of Each Group on the pretest and Posttest.

Test / Group	Pretest		Post-test	
	Mean	**SD**	**Mean**	**SD**
MIXING GROUP (n- 15)	19.60	5.770	25.20	1.989
GIRLS GROUP (n=15)	19.30	5.570	29.20	1.033
BOYS GROUP (n=15)	19.00	5.246	23.90	1.143

Figure 1. The Mean of the Three Groups in Pretest and Posttest



Analyses of Pre-test Performances

The analysis of the study involved first establishing if the data followed a normal distribution.

According to Crossman (2018), ANOVA can be conducted in determining whether two groups differ significantly on a particular measure or test. In this study, One-way (ANOVA) was utilised to determine whether there were pre-existing differences amongst the three groups before initiating the treatment. The findings showed that no significant differences exist between the performances of the three groups: **F (2, 27) =.062, p=.940**.

Analyses of Post-test

In the analysis of post-test two types of tests analysis were utilised. An independent sample t-test (a follow up analysis used to compare groups: ***mixed group*** vs. ***girls group***, ***mixed group*** vs. ***boys group***, ***girls group*** vs. ***boys group*** in the two tests) and a paired sample t-test (a follow up analysis used to compare tests within the same groups).

Independent Sample t-test Analysis

Regarding the pre-test analysis, three levels were analysed:

Level 1: *mixed group* vs. *Girls group*,

Level 2: *Mixed group* vs. *Boys group* ,and

Level 3: *Girls group* vs. *Boys group*.

The results revealed that there were not significant differences in the scores for level 1: t (18) = .298, **p= .776**, level 2: t (18) =-.418, **p= .681** and level 3: t (18) = .086, **p= .932**

With respect to post-test analysis, the results revealed that there were significant differences only between two levels, i.e., level 1: t (18) = -5.544, p<0.001 and level 3: t (18) = 6.022, p<0.001, but not with level 2: t (18) = 1,956, p= .066.

These results suggest that the three groups had similar scores before the treatment was initiated. Though, the results of post-test showed significant differences between group pairs except for group ***Mixed Group*** and ***Boys Group***. Put another way, group ***Girls Group*** significantly outperformed the other two groups and made significant improvements.

A paired-sample t-test

A paired-sample t-test was conducted to compare **Pre vs. Post-test** for each group.

The results showed that only two groups improved significantly from pre-test to post-test.

Group			T	df	sig
Mixed Group	Pair 1	Pretest – Posttest1	-10-.136	9	.000
Girls Group	Pair 1	Pretest – Posttest1	-6.960	9	.000
Boys Group	Pair 1	Pretest – Posttest1	-3.647	9	.005

The results of the paired sample t-test reveal that both groups (Mixed Group and Girls Group) improved significantly from pre-test to post-test.

To sum up, regarding the effect of **gender mixed groups** in the achievement in reading comprehension; the results revealed that Group (GIRLS GROUP) achieved the best results. They were better than the other two groups and that Group (MIXED GROUP) came second with better results than Group (BOYS GROUP). In other words, the study showed ample evidence that females significantly achieved better results than males. This finding is consistent with early research conducted by Murphy (2010) and Główka (2014). This finding means that gender has major influence on the mean achievement of the students in reading comprehension.

As for the second question of the study, the results showed remarkable development in the students' skills when using collaborative learning activities for they were effective in improving and accelerating the process of learning.

Discussion

The statistical results of the data presented above indicated that there were significant differences among the three groups in their performance in the posttest in terms of reading comprehension. The findings of the independent sample t-test showed that there were significant differences only between two levels (i.e. **Level 1**: *mixed group* vs. *Girls group*, **Level 3**: *Girls group* vs. *Boys group*). With regard to the paired-sample t-test, it was shown that both groups (Mixed Group and Girls Group) improved from pre-test to post-test. Based on the results, it is noticed that group ***Girls Group*** significantly outperformed the other two groups and made significant developments as they scored higher overall means than boys in the posttest. Generally, both gender mixed groups and collaborative learning proved to have an active role in the process of learning reading comprehension.

Conclusion

This study was conducted in order to examine the influence of gender mixed groups on learners' achievements and collaborative interaction in reading comprehension. The findings revealed that although the three groups improved from pre-test to post-test, the improvement of the group (GIRLS GROUP) was the best as it showed superiority over the other two groups. Based on the findings and discussion of the study, the following conclusions are made:

1. Gender has significant influence on the mean achievement of the students in reading comprehension, and

2. Collaborative learning activities facilitate and produce better reading comprehension of students.

The implication of the findings of the study are that teachers should receive appropriate training to implement collaborative learning in their classes. Moreover, teachers on their part would need to understand the materials that students can learn better by collaborative learning and use all available sources to support and facilitate students' participations. Additionally, learners need to be equipped with the necessary skills to enrich collaborative learning experience. Finally, teachers need to implement appropriate activities that encourage the interaction of boys and girls in the learning process and reduce the gender gap in performance.

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