

Impact of Jigsaw Cooperative Learning Technique on Enhancing Kuwait English Language Student-teachers' Speaking Skills

DOI: 10.15804/tner.2020.61.3.10

Abstract:

This quasi-experiment examined the impact of the jigsaw cooperative learning technique on enhancing the speaking skill of Kuwaiti student-teachers of English. In the first semester of 2019/2020, 40 female students enrolled in a Conversation Course were divided equally into control and experimental groups based on an oral presentation task (pre-test). Data was assessed through a speaking skill competency rubric (vocabulary, accuracy, fluency, and pronunciation). The post-test results indicated statistically significant differences between the means of the participants in favor of the experimental group. A pre-post experiment questionnaire was also administered to identify students' attitudes towards the jigsaw technique. SPSS program was used for data analysis. The t-test results showed a positive attitude of the experimental group towards cooperative learning and the jigsaw technique. It is recommended to use the jigsaw technique to improve students' speaking skills.

Key words: *Cooperative Learning, Jigsaw Technique, English Student-teachers, Speaking Skill, Kuwait*

Introduction

Speaking is an important skill for students of English needing to engage in different interactive activities. Students are expected not only to communicate

with others but also to be able to share the information obtained with other speakers. Nunan (1991, p. 23) defines speaking as the “ability to express oneself in the situation, or the activity to report acts, or situation in precise words or the ability to converse or to express a sequence of ideas fluently”. Thus, to be a good language speaker, it is necessary to reach an acceptable level of accuracy and fluency (Kao & Craigie, 2010). This can be achieved by providing language students with opportunities that promote their interaction (Brown, 2007). However, this is challenging for language students who are reluctant to take part in interactive speaking classroom activities due to their low language proficiency (Chen & Chang, 2009). Ur (1996, p.121) explains that “learners are often inhibited about trying to say things in a foreign language in the classroom: worried about making mistakes, fearful of criticism or losing face, or simply shy of the attention that their speech attracts”. Such issues can make language students silent or speak less when language teachers dominate the speaking activities which lead to a teacher-centered classroom (Pappamihiel, 2002), as students are dealt with as passive learners (Ning, 2011). Without doubt this negatively affects students’ confidence to participate (Gomleksiz, 2007). Yet, the teacher-centered model has shifted to a learner-centered model (Nunan, 1988). This shift has a positive impact on language students’ speaking skill and classroom participation (Kao & Craigie, 2010). However, students are still reluctant to participate as they find it difficult to speak and express themselves (Rashedi, 2017). Thus, to benefit from this shift in learning, it is necessary to adopt an alternative model to promote student speaking other than traditional speaking instruction. Based on research, cooperative learning with its varied techniques including jigsaw is a promising alternative to achieve the expected speaking proficiency (Ning, 2011). Ahmed & Bedri (2017) investigated the effects of cooperative learning on undergraduate learners’ oral skills in Khartoum. The experimental group showed improvement in their speaking performance. They were more motivated, less reluctant, and had a positive attitude towards cooperative learning activities. Cooperative learning has been found to be an effective learning strategy which improves students’ attitudes towards learning (Salvin, 1995).

Problem of Research

Speaking is an important language skill that needs to be mastered to reflect students’ abilities to use the language proficiently. This is even more important for English language student-teachers who need to communicate and express

themselves fluently and professionally as future language teachers. At Kuwait University, the purpose of the Conversation Course is to provide student-teachers with opportunities to speak and use the language productively and accurately. However, many English language student-teachers are not able to communicate fluently and easily. This creates a barrier which inevitably reduces effective interaction and negatively affects their future teaching performance. This study aims to examine the impact of jigsaw as a cooperative learning technique on enhancing the speaking skill of English language student-teachers with a focus on fluency, accuracy, use of vocabulary, and correct pronunciation.

Research Questions

The study attempts to answer the following questions and tests the related null hypotheses:

- 1) What is the impact of the jigsaw technique on Kuwaiti female English language student-teachers' appropriate practice of vocabulary, accuracy, fluency and pronunciation during speaking tasks?
- 2) What are the attitudes of the participants regarding the jigsaw technique?

The study tests the following null hypotheses at the significance level of $p=0.05$:

- 1) There are no statistically significant differences in the mean scores of control and experimental groups on the oral proficiency test.
- 2) There are no statistically significant differences in the mean scores of the participants' attitude based on the pre-post experiment results.

Research Focus

Cooperative learning has several techniques that foster students' interaction, one of which is jigsaw. Brown (2007) explains that the jigsaw technique is a form of information gap that encourages students to cooperate and share the needed piece of information to fill in the gap and complete the task. This encourages social interaction among the group members (Salvin, 1995). According to Gregory and Chapman (2007) jigsaw encourages a shared responsibility model of learning with a focus on the inter and intra-personal skills of the students which are valuable to the learning process. Social skills will be gained as students are encouraged to listen to each other and exchange their thoughts aloud (Johnson & Johnson, 2002). This eventually will help to develop students' language skills.

Several studies have been conducted to test the impact of jigsaw on students speaking skills. Erfiani and Neno (2018) explored the effect of jigsaw on improving students' vocabulary ability at Timor University in Indonesia. They found that the jigsaw technique improved students' vocabulary and their interaction with their teacher and other students. Rimani Nikou, Alavinia, Karimzadeh (2013) conducted an experimental study on 32 female students and found out that there was a statistically significant difference in the mean scores in favor of the experimental group's speaking ability as they outperformed the control group and obtained a higher average score. Lin (2010) investigated the perspectives of Taiwanese teachers and students towards the use of jigsaw technique in first-year university level English classrooms. The results showed it had significantly contributed to the experimental group. Regardless of whether participants expressed positive or negative opinions, both groups expressed their willingness to continue adopting jigsaw in their future English classes. In addition, the jigsaw technique has been found to have a positive impact on improving English Language students' participation and enthusiasm (Mengduo & Xiaoling, 2010), and students' academic achievement (Evcim & İpek, 2013).

Methodology of Research

General Background of Research

This quasi-experimental study aimed to examine the impact of the jigsaw cooperative learning technique on enhancing the speaking skill of Kuwaiti student-teachers of English.

Sample of Research

The sample consisted of 40 female Kuwaiti student-teachers of English enrolled in a Conversation for the Language Teachers Course in the first semester of 2019/2020. They were in their second year of study at the College of Education at Kuwait university. They were divided equally into two groups, control and experimental. The participants were homogeneous with regard to age, ranging from 19 to 20 years old, gender, mother tongue (Arabic), exposure to English and educational and cultural background. However, they were heterogenous with respect to their language proficiency. The purpose of the study was explained to the experimental group, and their consent to take part in it was obtained.

Instrument and Procedures

Instrument

Two research instruments were used. The first was a speaking test used as a pre-post-test with three tasks (presenting an educational game, commenting on an educational YouTube video, and presenting a teaching technique) to measure their English-speaking performance. A speaking skill competency rubric was developed to measure the quality of performance based on four criteria: vocabulary, accuracy, fluency, and pronunciation with a four-rating scale of fair, adequate, good, and excellent. To establish the reliability of the first instrument, it was checked through a test-retest method. The test was administered twice with a pilot group of 20 students within a span of 7 days to calculate the correlation coefficient between the two sets of scores, which was found to be 0.96, which is an acceptable value. In addition, inter-rater reliability which is the degree of agreement between the two test-retest scores was checked. The correlation coefficients obtained for the two scores were 0.911 and 0.915 which indicated high inter-rater reliabilities. Thus, the test was reliable and valid as a research tool.

The second instrument was an eight item attitude questionnaire on a 3-point-Likert scale ranging from 1 „agree”, to 3 „disagree” which was developed by the researcher based on reviewing relevant literature. It was used to identify students' attitude on the use of cooperative learning. Means, standard deviations, and t-test were calculated and analyzed using SPSS program. The validity of the questionnaire was verified by 4 faculty members from the College of Education at Kuwait University. The questionnaire reliability coefficient of Cronbach's alpha was 0.87, with a mean of 3.76 and a standard deviation of 1.27, which was suitable for the study.

Procedures

The participants were divided into two groups, control and experimental. They were introduced to the same speaking topics and had a six-week treatment period with 18 hours of speaking classes, each of which lasted one hour. The control group attended classes following the traditional method of teaching and received instructions on assigned topics to prepare at home, and their participation was through making oral presentations and taking part in class discussions. Students were given the opportunity to ask questions and get answers from their professor (the researcher) and their classmates. The experimental group was introduced to the jigsaw technique and how to participate accordingly. Students were divided into five groups of four students each with different speaking skill levels based on

their previous speaking test results. For the first 20 minutes of class time, students with the same segment of the discussed topic had to join the expert group to discuss the topic in details. For the second 20 minutes, they rejoin their jigsaw groups to share their in-depth ideas with their group members. In the last 20 minutes of class, the jigsaw groups shared the results of their experience orally with their other classmates. This guaranteed that the entire class took part in the oral activities related to the discussed topic. The researcher's role was to monitor and assess students during class time to ensure that all students were participating. The researcher assessed students based on their choice of relevant vocabulary, accuracy, fluency, and pronunciation. Student were allocated 5 minutes to give an oral presentation in front of their classmates in the next class meeting. Both groups responded to the questionnaire before and after the experiment to find out their attitudes towards the jigsaw technique and its impact on enhancing their speaking skill.

Data Analysis

Pretest-posttest method was applied to analyze the study results. Data analysis was run by using SPSS (25.0) and the significance level of $p = 0.05$ was adopted. Mean scores, and standard deviations were calculated. A t-test was conducted to evaluate the impact of jigsaw on enhancing the speaking performance of the experimental group as compared with the performance of the control group. As well, the t-test was used to compare the pre-post questionnaire results.

Research Results and Discussion

This section provides answers to the two research questions raised and the related null hypotheses.

The First Research Question

Light will be shed on the first question: (what is the impact of the jigsaw technique on Kuwaiti female English language student-teachers' appropriate practice of vocabulary, accuracy, fluency and pronunciation during speaking tasks?) and the null hypothesis is: "there are no statistically significant differences in the mean scores of the control and experimental groups on oral proficiency test. Table 1 presents the pre-test results of the control and the experimental groups".

As seen in Table 1, the mean scores were of similar levels in both groups. There were no statistically significant differences in the performance of the student-teachers in both groups as the values were greater than the statistical significance level $p = 0.05$. This meant that both groups demonstrated similar levels

Table 1. Pre-tests of the Control and Experimental Groups

| Speaking Competencies | Groups | Mean | Stand. Dev. | T | df | Sig. (2-tailed) |
|---|--------------|-------|-------------|-------|----|-----------------|
| Vocabulary (use of variety of relevant vocabulary and expressions) | Control | 2.725 | 0.694 | 0.363 | 38 | 0.971 |
| | Experimental | 2.743 | 0.754 | | | |
| Accuracy (correct use of grammatical rules) | Control | 2.850 | 1.197 | 0.328 | 38 | 0.794 |
| | Experimental | 2.773 | 0.975 | | | |
| Fluency (fluent and smooth speaking) | Control | 2.467 | 0.764 | 0.434 | 38 | 0.977 |
| | Experimental | 2.474 | 0.969 | | | |
| Pronunciation (correct pronunciation and intonation) | Control | 3.797 | 1.062 | 1.495 | 38 | 0.395 |
| | Experimental | 3.402 | 1.148 | | | |

of their English language speaking competencies with reference to their use of vocabulary, correct grammar, fluency, and correct pronunciation. Thus, there was no group favored over the other.

Results of Testing the Null Hypothesis of the first study:

The study null hypothesis is as follows: there are no statistically significant differences in the mean scores of the control and experimental groups on oral proficiency test. To find out the impact of the jigsaw technique on the experimental group compared to the control group, the null hypothesis was tested. Table 2 represents the post-test results.

Table 2. Post-test Results of the Control and Experimental Groups

| Speaking Competencies | Groups | Mean | Stand. Dev. | T | df | Sig. (2-tailed) |
|--|--------------|-------|-------------|-------|----|-----------------|
| Vocabulary (use of variety of relevant vocabulary and expressions) | Control | 2.488 | 0.584 | 3.231 | 38 | 0.002* |
| | Experimental | 2.842 | 0.628 | | | |
| Accuracy (correct use of grammatical rules) | Control | 2.219 | 0.948 | 4.454 | 38 | 0.000* |
| | Experimental | 3.096 | 1.161 | | | |
| Fluency (fluent and smooth speaking) | Control | 2.249 | 0.683 | 2.198 | 38 | 0.029* |
| | Experimental | 2.552 | 0.819 | | | |
| Pronunciation (correct pronunciation and intonation) | Control | 3.579 | 1.089 | 2.300 | 38 | 0.024* |
| | Experimental | 3.978 | 1.020 | | | |

Table (2) shows that the post-test mean scores of the experimental group were far better than those of the control group. The post-test revealed that the application of the jigsaw technique had improved the speaking competencies of the experimental group in their use of vocabulary, correct grammar, fluency, and correct pronunciation. Notably, the significance levels of the experimental group variables in the four speaking skill competencies were less than the significance level $p=0.05$, which meant that there were statistically significant differences attributed to the learning method, i.e. the jigsaw. Thus, the null hypothesis was rejected.

The Second Research Question:

The following section provides answers to the second research question and the related null hypothesis which is as follows: “what are the attitudes of the participants regarding the jigsaw technique?” and the null hypothesis is “there are no statistically significant differences in the mean scores of the participants’ attitudes based on the pre-post experiment results”. Table 3 presents the mean scores and standard deviations of both the control and experimental groups in the pre-post experiment questionnaire results to find out their attitudes towards the jigsaw technique.

Table 3. Control and Experimental Groups Pre-Post Questionnaire Results

| Questionnaire Items | Pre-test | | | | Post-test | | | |
|--|----------|-------------|--------------|-------------|-----------|-------------|--------------|-------------|
| | Control | | Experimental | | Control | | Experimental | |
| | Mean | Stand. Dev. | Mean | Stand. Dev. | Mean | Stand. Dev. | Mean | Stand. Dev. |
| 1) Cooperative Learning makes learning easier | 2.386 | 0.651 | 2.427 | 0.598 | 2.471 | 0.746 | 3.542 | 1.090 |
| 2) Cooperative Learning enhances class participation | 2.068 | 0.938 | 2.047 | 1.140 | 2.450 | 0.827 | 3.970 | 0.968 |
| 3) Cooperative Learning enhances good working relationships. | 2.0293 | 0.778 | 2.506 | 0.790 | 2.837 | 1.164 | 3.768 | 1.143 |
| 4) Students who work together achieve more than when they work alone | 2.469 | 1.215 | 2.538 | 1.023 | 2.615 | 0.660 | 3.835 | 1.134 |
| 5) Jigsaw technique helped in gaining vocabulary | 2.257 | 0.964 | 2.704 | 0.533 | 2.478 | 0.613 | 3.683 | 0.960 |
| 6) Jigsaw technique helped in using correct grammatical rules | 2.624 | 1.118 | 2.970 | 1.998 | 2.355 | 0.805 | 3.852 | 1.113 |

| | | | | | | | | |
|--|-------|-------|-------|-------|-------|-------|-------|-------|
| 7) Jigsaw technique helped in speaking fluently and smoothly | 2.773 | 0.975 | 2.854 | 1.196 | 2.630 | 0.740 | 2.998 | 1.188 |
| 8) Jigsaw technique helped in improving my pronunciation | 2.405 | 1.148 | 2.973 | 1.062 | 2.295 | 0.700 | 3.957 | 1.020 |

Table 3 showed that the mean scores of both the control and experimental groups were of similar level in their responses to the pre-experiment questionnaire. The data suggested that both groups were similar in their attitudes towards the jigsaw technique before starting the experiments. However, the mean scores of the experimental group were higher than those of the control group in the post-experiment questionnaire, which indicated that student-teachers in the experimental group benefited from the jigsaw technique in enhancing their speaking skill competencies and outperformed the control group.

Results of Testing the Second Study's Null Hypothesis:

The study null hypothesis is as follows: there are no statistically significant differences in the mean scores of the participants' attitude based on the pre-post experiment results. To determine if there was a significant statistical difference between student-teachers in the control and experimental groups, a t-test was conducted at both levels i.e., pre- and post- experiment questionnaires. The results obtained enabled us to test the null hypothesis of the second research question. Tables (4 and 5) present the pre-post experiment questionnaire results using the t-test.

Table 4. Pre-Experiment Students' Attitudes Questionnaire Results

| Group | Number of Participants | Mean | Stand. Dev. | T | df | Sig. (2-tailed) |
|--------------|------------------------|-------|-------------|-------|----|-----------------|
| Control | 20 | 2.384 | 1.582 | 1.684 | 38 | 0.582 |
| Experimental | 20 | 2.536 | 0.876 | | | |

Table 4 showed that there were no statistically significant differences in the attitudes of the two groups towards the jigsaw before carrying out the experiments. The significance level of the pre-experiment result 0.582 was higher than the significance level $p=0.05$. It can be judged that the two groups were at similar level of attitudes towards cooperative learning and the jigsaw technique before conducting the experiment.

Table 5. Post-Experiment Students' Attitudes Questionnaire Results

| Group | Number of Participants | Mean | Stand. Dev. | T | df | Sig. (2-tailed) |
|---------------|------------------------|-------|-------------|-------|----|-----------------|
| Control Group | 20 | 2.521 | 1.324 | 1.963 | 38 | 0.026* |
| Experimental | 20 | 3.882 | 0.568 | | | |

Table 5 showed that there were statistically significant differences with reference to the post-experiment questionnaire in favor the experimental group. The mean score of the experimental group was 3.882 with a standard deviation of 0.568, while the mean score of the control group was 2.521, with a standard deviation of 1.324. This suggested that the experimental group benefited from learning using the jigsaw technique compared with the control group students who were taught by traditional teaching method. Notably, the significance level of the post experiment 0.026 was less than the significance level $\alpha=0.05$. Thus, the null hypothesis was rejected.

Conclusion

This study was conducted to examine the impact of jigsaw cooperative learning technique on enhancing the speaking skill of Kuwaiti English language student-teachers. The statistical analysis of the pre-test scores indicated that the control and experimental groups showed equivalent levels of their speaking performance. However, the post-test results confirmed that there was a significant increase in the speaking performance of the experimental group at the significance level of $\alpha=0.05$, and that was seen in their increased speaking abilities. The participants were able to speak fluently and accurately with correct use of vocabulary, and correct pronunciation. Such results were in accordance with those of Erfiani and Neno (2018) and Rimani Nikou, Alavinia, and Karimzadeh (2013) as their participants showed improvement in their vocabulary ability and interaction with their teachers and classmates. In addition, their social skills with their classmates became better and they gained self-confidence to speak in front of the class as indicated by Salvin (1995), Johnson & Johnson (2002), and Gregory and Chapman (2007). The findings contradicted with those of Rashedi (2017) and Gomleksiz (2007) who concluded that their students were reluctant to participate as they found difficulty in speaking and expressing themselves. Thus, the first study null hypothesis was rejected.

In addition, the post-test questionnaire results show that the experimental group had positive attitudes towards the jigsaw technique compared with their pre-test results which were similar to the control group in the pre-test. This supports the findings of Mengduo and Xiaoling (2010) that the jigsaw technique had a positive impact on improving English Language students' participation and enthusiasm. However, the control group scored similar results in the pre-posttest as they did not experience learning with the jigsaw technique. Thus, the second null hypothesis was rejected as well.

Finally, the results of this study indicated the advisability of applying the jigsaw technique to enhance the speaking skill of English language student-teachers. The study drew attention to the importance of speaking as a fundamental skill of the English language. The findings supported what the literature indicated about the effectiveness of using cooperative learning and the jigsaw technique in developing the speaking skill.

Based on the study findings, three important recommendations are highlighted:

1. Language teachers at university level and public schools should employ this technique to teach the speaking skill because it is more effective than traditional teaching methods.
2. Workshops and training sessions should be held about how to apply the cooperative learning and the jigsaw technique.
3. Future studies should be conducted to identify the effectiveness of the jigsaw technique in teaching other language skills, such as reading and writing.

References

- Ahmed, S., & Bedri, A. (2017). The role of cooperative learning in enhancing EFL learners' oral communication skills. *International Journal of English Language, Literature and Translation Studies*, 4 (1), 33–40.
- Brown, H. (2007). *Principles of language learning and teaching* (5th ed.). White Plains, NY: Pearson Education Inc.
- Chen, I., & Chang, C. (2009). Cognitive load theory: An empirical study of anxiety and task performance in language learning. *Electronic Journal of Research in Educational Psychology*, 7 (2), 729–746.
- Erfiani, Y., & Neno, H. (2018). The effect of jigsaw method to improve EFL students' vocabulary ability. *Metathesis: Journal of English Language Literature and Teaching*, 2 (2), 171–183.
- Evcim, H., & İpek, Ö. (2013). Effects of jigsaw II on academic achievement in English prep classes. *Procedia Social and Behavioral Sciences*, 70 (1), 1651–1659.

- Gregory, G., & Chapman, C. (2007). *Differentiated instructional strategies: One size fits all*. Thousand Oaks, Calif: Corwin Press.
- Gomleksiz, M. (2007). Effectiveness of cooperative learning (jigsaw II) method on teaching English as a foreign language to engineering students (Case of Firat University, Turkey). *European Journal of Engineering Education*, 32 (5), 613–625.
- Johnson, D., & Johnson, R. (2002). Cooperative learning methods: A meta-analysis. *Journal of Research in Education*, 12 (1), 5–24.
- Kao, P., & Craigie, P. (2010). Foreign language anxiety and English achievement in Taiwanese undergraduate English-major students: An empirical study. *Hung Kuang Journal*, 61, 49–62.
- Lin, L. (2010). Perspectives of teachers and students toward cooperative learning jigsaw tasks in Taiwanese EFL classrooms. (Doctoral Thesis).
- Mengduo, Q., & Xiaoling, J. (2010). Jigsaw strategy as a cooperative learning technique: focusing on the language learners. *Chinese Journal of Applied Linguistics*, 33 (4), 113–125.
- Ning, H. (2011). Adapting cooperative learning in tertiary ELT. *ELT Journal*, 65 (1), 60–70.
- Nunan, D. (1988). *The learner-centred curriculum*. Cambridge: Cambridge University Press.
- Nunan, D. (1991). *Research methods in language learning*. Cambridge: Cambridge University Press.
- Pappamihel, N. (2002). English as a second language students and English language anxiety: Issues in the mainstream classroom. *Research in the Teaching of English*, 36 (3), 327–355.
- Rimani Nikou, F., Alavinia, P., & Karimzadeh, N. (2013). The Effect of using jigsaw to enhance female Iranian intermediate EFL learners' oral proficiency. *Australian Journal of Basic and Applied Sciences*, 7 (9), 315–326.
- Rashedi, M. (2017). Why do Kuwaiti students in the College of Arts think that learning English is both difficult and unnecessary? *European Journal of English Language Teaching*, 2 (3), 68–82.
- Slavin, R. (1995). *Cooperative learning: Theory, research, and practice* (2nd ed.). Needham Heights, MS: Allyn and Bacon.
- Ur, P. (1996). *A course in language teaching: Practice and theory*. New York: Cambridge University Press.

Acknowledgement

I would like to thank the participants in this study for taking part and making this study possible.