The Effect of the Discussion Part of the Peer Instruction on the Students' Learning Levels of Turkish as a Second Language (Kazakhstan Sample)

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Abstract: The peer instruction method has become an effective learning strategy at all educational levels. The peer instruction method developed by Mazur can be defined as a method in which participants actively participate in the educational process by discussing and helping each other in a peer group during the lesson. In the research, the subjects named "Communication and Media, Technological Developments" in the Harmoni 2 textbook were discussed. In this study, the effect of discussion on the answers of 24 8th-grade students in peer instruction techniques during the lesson was investigated. The application was carried out in Astana City Girls High School (BIL) in Kazakhstan in five weeks with 24 students who took Turkish lessons from Kazakh cognate students whose mother tongue was not Turkish. The data of 50 multiple choice concept test questions asked to the students in the course were analyzed. Data were analyzed using the independent t-test (p=.000) in the SPSS 21.0 program. Considering the results, it was observed that the discussion had an important effect on the transformation of the wrong answers given by the students to the concept test questions into correct answers.

Keywords: Peer instruction, active learning method, discussion.

Introduction

In recent years, teaching Turkish as a foreign language has become more common day by day. For this reason, the studies of institutions and organizations that teach Turkish as a second language in the country or abroad as a foreign language has increased recently (Yılmaz & Arslan, 2014).

Although teaching Turkish as a foreign language is an issue that should be given importance, the methods, and techniques used in teaching the target language are also of great importance. Demircan (1990) emphasized that language should be the focus of educators at the point of how language should be taught, and therefore foreign language teaching approaches and methods should be followed and well known. Then, for language teaching to be at the expected level, first of all, the right method and technique should be used.

Mazur (1997) developed the peer instruction method based on his experience and applications in the physics courses he gave at Harvard University. Peer instruction is a teaching method in which students think about conceptual questions and contribute to their learning by discussing with each other, while the teacher gives key concepts and guides them more in the lesson.

Mazur (1997) states that in the Harvard University Physics department, where traditionally the course is taught by explaining and solving questions, even if they solve the mathematical questions, they cannot answer the physics questions at a conceptual level. Likewise, it has been emphasized that even if students successfully learn algebraic problem-solving, the traditional teaching method does not provide enough benefits for students to understand the basic concepts of physics (Crouch & Mazur, 2001). Di Carlo and Rao (2000) reported that the effect of the peer instruction

method depends on the students' transfer of knowledge to their classmates during discussions, including correct answers as well as solutions and reasons.

The discussion part is at the heart of peer instruction. In this process, discussion among classmates develops deeper thinking, develops complex thinking skills on multiple-choice concept test questions, and finds different explanation methods by sharing and encouraging alternative ideas and thoughts (Gok, 2012). Peer instruction: it is fast, fun, and supportive. Therefore, it has a positive effect on students' success. Students acquire knowledge by doing and experiencing. Since knowledge and skills are students' work, they also affect retention positively (Akay, 2011).

Peer discussion is the best-known feature of the peer instruction model, and much of this review has focused on analyzing the learning achievements observed after students' discussion. Smith et al., 2009; Porter et al., 2011b; Bruck and Towns, 2009; Lasry et al., 2009; Brooks and Koretsky, 2011; Willoughby et al., 2011; Kaymak, 2020; Morgan & Wakefield, 2012; Giuliodori, Lujan, & Di Carlo, 2006 stated in their research that students' incorrect answers turned into correct answers to a large extent after discussion. Tullis and Goldstone (2020) stated in their study that students' self-confidence increased after the peer instruction discussion.

Crouch and Mazur's study (2001) is the most comprehensive research on this subject, with ten years of experience and results. The findings they obtained showed that the discussion was positive for the students and the accuracy rate of correct answers increased between 35-70% compared to the first answers.

Figure 1 shows the change in the answers of the students from the wrong answer to the correct answer during the discussion (Catherine, Crouch & Mazur, 2001).

Figure 1

Change of answers
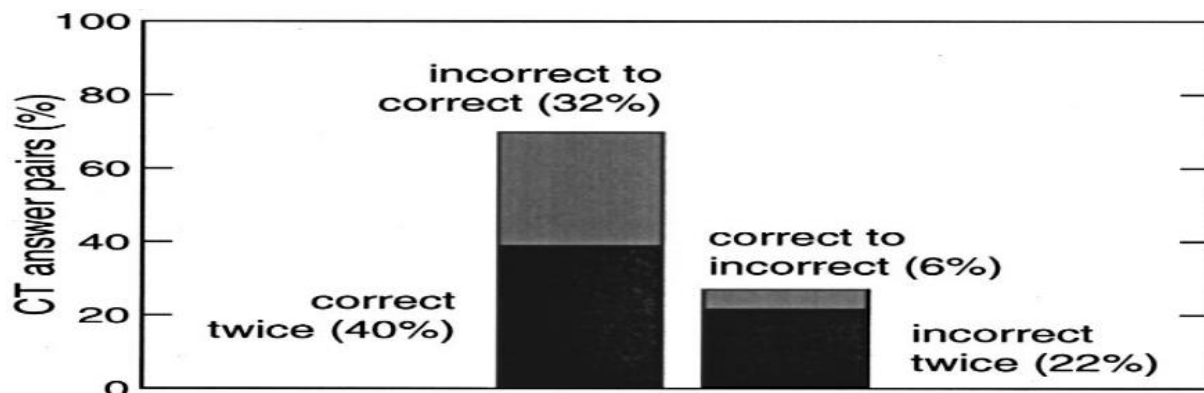
In a study conducted by Di Carlo and Rao (2000) with 256 first-year medical psychology students for 10 weeks, they found that the peer instruction method significantly increased the rate of answering the conceptual questions in the discussion section. Three types of questions were asked in the study: recall, intermediate and integrative. The rise of

correct answers to recall questions increased from 94% to 98%, there was an increase in intermediate questions from 82.5% to 99.1%, and there was a change in the type of integrative questions from 73.1 to 99.8%. After the discussion section, the correct answers given to the questions with high difficulty were higher than the other types of questions.

Chou and Lin (2015), in their study at Yuan Ze University in Taiwan, the discussion section which is one of the main features of peer instruction, provided students with the opportunity to randomly select their peers in the classroom and enabled students to participate in the discussion actively and willingly. In determining the students' willingness to participate in the discussion process, a scoring system was used by the instructor during the group formation stage, where the correct answers given by the group members also affected the scores of the other students at a certain level. The scoring system is 40% of the individual responses before the discussion, 30% of the individual responses after the discussion with their peers, and 30% to 15% of the individual responses given by their peers after the discussion for groups of two students. It is the sum of individual responses given by their peers in groups of three students. In the study, in which 86 students participated, the above scoring system was used with groups predetermined by the instructor in each lesson in the first 6-week stage of an 11-week process, and in the second 5-week stage a discussion process consisting of random groups was carried out. The students conveyed their answers to the teacher through the electronic response system. In addition, they submitted an evaluation form through the electronic response system, in which they indicated whether they participated in the discussion and whether it had any effect on their answers. After the first 6-week phase, the opinions of the students about the discussion section were compiled and evaluated using a 5-point Likert-type scale.

Kaymak (2020) investigated the effect of the discussion section on peer instruction during the lesson. The application was carried out with 30 students at Süleyman Demirel University for five weeks. In the research, 32 questions were asked in the mathematics analysis course, the average of the first correct answers was 16,625, and the average of the second correct answers after the discussion part was 26,625. As a result of the analysis made with the independent t-test, the difference was found to be significant (p= .000). The contribution of the discussion section to the increase of correct answers was presented as a result of the research.

According to Podolner (2000), students' efforts to persuade their friends in the discussion section in peer education lessons increase both the rate of correct answers given to the questions and their confidence in the correct answer. While only 3% converted the correct answer to the wrong answer; 29% of the students corrected their initial wrong answers.

Smith et al., (2009) investigated whether students were influenced by their peers in the increase in correct answer rates. In the study they conducted in the medical school genetics course in the USA, the data of peer discussions during peer instruction were examined. 350 students participated in the research, and they were asked to make peer discussions by asking questions. After the discussion, the students were asked to measure the same concept and ask the same question and answer them personally. As a result of the research, it was determined that peer discussion

improved conceptual understanding and this result was valid for students who did not answer the question correctly in the discussion group the first time.

In addition, many studies have stated that the discussion section positively affects students' self-confidence, increases students' conceptual understanding, affects students' deep learning, improves students' creative abilities, and is effective in developing their thoughts after peer assessment. 90% of the students who explained their answers stated that "the discussion with peers after the individual answer led to deeper thinking about the subject".

Purpose and Method of the Study

The research aims to examine whether the answers given by the students to the concept test during the lesson in the discussion section in peer instruction change the success of the students in a positive or negative research answer to the question "Does the peer instruction discussion change the answers of the students positively or negatively?" was sought.

Turkish lessons for 8th grade stud8th-grade2 level, as 4 lessons of 40 minutes per week are included in the program. The implementation of peer instruction was carried out as described by Mazur (1997).

Two lessons consisting of 40 minutes are given in a period total, in the form of short lectures in which the general concept of the 15–20-minute lesson is delivered to the students. Afterward, a random group of people is formed in the class and the multiple-choice concept test questions are started.

* Question is reflected (approximately 1 minute)

* Students are given time to solve the concept test (approximately 1-2 minutes)

* Individual answers from students are taken and analyzed. If the correct answer rate is below 35%, the teacher repeats the lecture, if it is more than 70%, it goes to the other question, if it is between 35%-70%, it goes to the discussion section, which is the other step of peer instruction.

* Student groups engage in peer discussion (approximately 1-2 minutes)

* Second answers from students are collected.

* Finally, the teacher shares the answer to the question with the students (Mazur, 1997).

Data Collection and Analysis

The participants of this study are 24 students who take Turkish lessons at a Girls' High School (BIL) in Astana, Kazakhstan. In this research, the effect of the discussion section on the first and second answers given to the concept test questions in the Turkish lesson for the Kazakh students whose mother tongue is not Turkish was examined in the implementation phase of peer instruction.

50 different multiple-choice concept questions prepared by the teacher were prepared in order to examine whether they understood the subject conceptually or not. The answers to the questions in this multiple-choice concept test were measured.

The data were obtained from 24 eighth grade students in the discussion eight-grade peer instruction practice during the lesson. The application was made as Eric Mazur stated, and after the short lecture, multiple choice concept test questions were started. The first and second answers given by the students to the test questions administered to them were recorded for five weeks. The obtained data were analyzed with the help of independent t-test in SPSS 21.0 program.

An

Findings and Interpretations

Implementation of the Peer instruction's Discussion Section

Sample question

Which word is not related to newspaper?

   a-   post b-puzzle c-interview d-a command

Figure 1

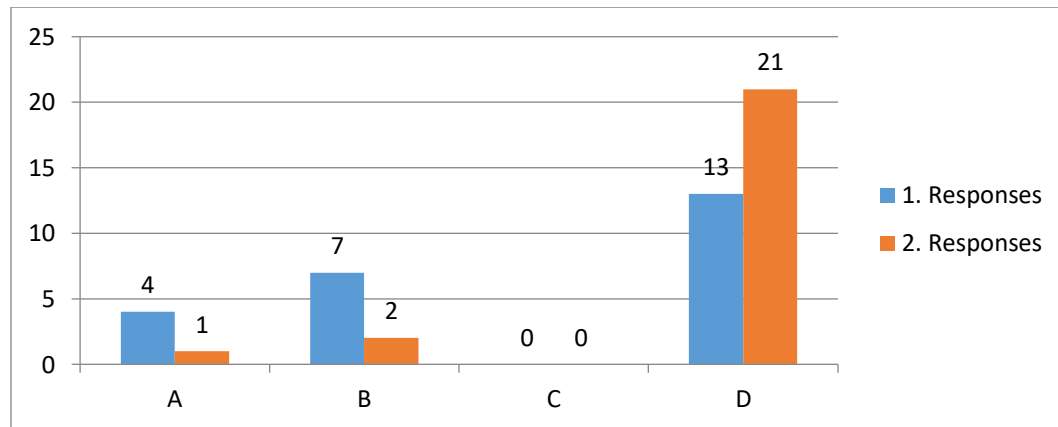*Students' First and Second Responses to the Sample Question. The correct answer is D.*

Table 1

Independent T-test Group Statistics Results

Answers	N	Mean	Std. Deviation	Std. Error Mean
Before the discussion	50	13,3400	3,72860	,52730
After discussion	50	19,2400	3,00720	,42528

The average of correct answers before the discussion was 13.34, and the average of the correct answers given after the discussion was 19.24. This result shows that there is a significant difference in the success of the students after the discussion.

Table 2

Independent T-test

t	df	p. (2-kuyruk)
-8.709	98	.000

The statistical significance of the obtained results was checked with the independent t-test. Independent t-test results show that discussion has a positive effect on students' answers (t (98) =-8.709, p=0.000).

Conclusion and Discussions

The peer instruction method was started to be applied by Eric Mazur in the physics course at Harvard University, and as its effects on the success of the students were seen, it started to be applied in other fields (mathematics, chemistry, biology, astronomy, psychology, etc.). Studies are needed to determine the effects of this method in the field of Turkish, especially in the field of Turkish as a foreign language. In this study, the effect of the discussion part of peer instruction in Turkish as a foreign language lesson on the second answers was investigated. In answer, peer instruction practice during the lesson was carried out as in Mazurun's (1997) practice. In the Turkish lesson, 50 multiple-choice test questions were evaluated. In the study, it was observed that the discussion section changed the reactions of the students in a positive way. A significant increase was found in the correct answers of the students, similar to the study by Crouch and Mazur (2001), it was revealed that the correct answers to the concept test increased after the discussion in the class.

In the study, it was determined that after the peer discussion, there was an increase in the average scores of the second answer (19.24) compared to the first answer (13.34) in the correct answers to the multiple-choice questions. The significance of this increase in mean scores was determined as a result of analyzes with independent tests (p= 0.0). As seen in previous studies, it has been shown that the answers of the students tended towards the correct answer from the wrong answer. The reason for this is that students interact positively with each other to find the right solution. Then they can successfully communicate the correct solution to their classmates. This showed that discussion is an effective peer instruction tool and that discussion has a positive effect on correcting students' incorrect answers. The result is consistent with previous studies in this area (Brooks & Koretsky, 2011; Bruck & Towns, 2009; Crouch & Mazur, 2001; Giuliodori, Lujan & Di Carlo, 2006; Kaymak, 2020; Lasry et al. 2009; Morgan & Wakefield. , 2012; Porter et al. 2011b; Smith et al., 2009; Straw, Wicker & Harper, 2021; Willoughby, 2011).

The effects of peer instruction in the field of Turkish as a foreign language on students' achievement, attitudes, participation in the course, and self-confidence should be demonstrated with new studies. In this study, we showed the positive effect of peer instruction on the second answers of the participants in the light of the results. Pen construction practice in the field of Turkish as a foreign language needs to be examined from various aspects by further studies.

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Appendix: Sample Questions Used in Peer Teaching Practice

1**-**Aşağıdakilerden hangisi hem görsel hem de işitsel iletişim aracıdır?

a-radyo   b-televizyon   c-faks   d-telgraf

2-Aşağıdaki fillerden hangisi duyulan geçmiş zaman fiilidir?

A-oku   b-okuyacak   c-okumuş   d-okuyor

3-Aşağıdaki eşleştirmelerden hangisi doğrudur?

a-sanal sohbet-gazete

b-yazar-gazete

c-kısa mesaj-televizyon

d-kumanda-internet

4-Mektup eski bir iletişim aracıdır.

a-doğru   b-yanlış

5-İnternet günümüzde kullanılan en etkili iletişim aracıdır.

a-doğru   b-yanlış

6-Gazete ile ilgili olmayan kelime hangisisdir?

a-ilan   b-bulmaca   c-röportaj   d-kumanda

7-Gazete işitsel bir iletişim aracıdır.

a-doğru   b-yanlış

8-Mektup yazmak için hangi araç gerece ihtiyaç yoktur?

a-kalem   b-kağıt   c-kulaklık   d-zarf

9-Gazete manşetlerinde günün en önemli haberleri yer alır.

a-doğru   b-yanlış

10-Haberleri nereden takip ediyorsun sorusunun cevabı aşağıdakilerden hangisi olabilir?

a-babam ve ağabeyim

b-gazete ve dergi

c-facebook ve twitter

d-televizyondan ve internetten

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