

## A PERSPECTIVE ON PEER ASSESSMENT IN PROJECT-BASED LEARNING IN TEACHING TURKISH TO FOREIGNERS

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### Abstract

*In the context of modern requirements in teaching Turkish to foreigners, it is necessary to be open to new methods and techniques that differ from traditional ones. As education is human-centered, it evolves and changes as humans develop. Although there are many studies in this field, to acknowledge the existence of previous research and to draw attention to the fact that there is a certain gap or deficiency despite these studies.*

*peer education is one of the language teaching methods that require further research. In this study, a peer assessment report was obtained through a project-based learning approach in teaching Turkish to foreigners. The assessment was incorporated into the study using an analytical method. The peer assessment study of project-based learning was applied to 40 students, and their comments and analyses were included in the study. The perceptions of the 40 students involved in the peer assessment study of project-based learning were analyzed based on their comments and feedback. These perceptions provide insights into how students view the effectiveness of peer assessment as a tool in enhancing their learning experiences. The students' reflections on the process, including their views on the value and challenges of peer assessment, were crucial in understanding its impact on their engagement, motivation, and learning outcomes.*

**Key Words:** Project-Based Learning, Assessment, Education, Modern Requirements, Language Teaching

### Introduction

With the advancement of technology, nearly every region of the world has become increasingly accessible. The growing awareness of cultural diversity has stimulated a heightened sense of curiosity among individuals. In this context, the need for spoken communication—recognized as a fundamental tool for interaction among speakers of different languages—has significantly increased.

According to Evrim Önem (2011), rapid changes and transformations are being observed in the field of education, as in all areas of contemporary life. As a consequence of these developments, global interaction among individuals has become increasingly prominent. In this context, the acquisition of foreign languages has emerged as a necessity. The languages of nations that play a leading role in global interaction have gained significance in line with the dynamics of modern life. Accordingly, with the growing importance of Turkey and the Turkish language, the need to teach Turkish as a foreign language has come to the forefront.

According to Artgün (2014), the results that students achieve in examinations during the academic year are considered as indicators of academic achievement in the field of education. Consequently, students' academic success is commonly evaluated based on the concrete grade point averages they obtain.

Peer teaching, as a technique characterized by intensive classroom interaction, is regarded as one of the effective and valuable instructional methods. Due to its requirement of active student participation, its alignment with democratic educational approaches, and its capacity to facilitate both cognitive and emotional communication in the classroom, it is considered a productive and applicable method, particularly in Turkish language courses where the creation of meaningful outcomes is essential.

#### 1.1 What is the scope and focus of the study?

The focus group of this study consists of 40 students learning Turkish as a foreign language, and their feedback during the peer assessment process within the project-based learning approach. The students assessed their peers' projects, and these evaluations were incorporated into the study for analysis.

The focus of the study is to examine the effectiveness of peer assessment within the project-based learning process in teaching Turkish as a foreign language. The research aims to explore how peer assessments contribute to students' learning experiences and academic success.

#### 1.2 Research Gap:

While there have been numerous studies on various language teaching methods, there is a noticeable gap in research specifically focusing on the use of peer education and peer assessment in teaching Turkish to foreigners. Despite the growing interest in project-based learning, limited attention has been given to how peer assessment can enhance this approach in the context of foreign language acquisition. This study addresses the gap by exploring the application and effectiveness of peer assessment within project-based learning in Turkish language instruction.

#### 1.3. Research Aim:

The aim of this study is to investigate the role and effectiveness of peer assessment in project-based learning for teaching Turkish as a foreign language. Specifically, it seeks to explore how peer evaluation influences students' learning outcomes, participation, and engagement in the learning process.

#### 1.4. Research Questions:

1. How does the implementation of peer assessment within a project-based learning approach affect students' learning outcomes in Turkish language instruction?
2. What is the impact of peer assessment on student engagement and participation in the learning process?
3. How do students perceive the value and effectiveness of peer assessment in their language learning experience?
4. What are the challenges and benefits associated with incorporating peer assessment in teaching Turkish as a foreign language?

Including specific research questions would help guide the methodology and strengthen the overall structure.

#### 1.5. Research method

In this study, document analysis was conducted by including students' opinions against each other in peer evaluation and Likert scale analysis was added, both quantitative and qualitative research methods were used

#### 1.6. What is Peer Education?

Recent studies in the field of teaching Turkish to foreigners have incorporated modern teaching methods. One of these methods, emphasizing student activity, is peer education. Recognizing the benefits of classroom discussions, Mazur developed a new active teaching approach called Peer Instruction in 1997. According to Vygotsky (1978), student discussions allow learners to see multiple perspectives on the same issue. Learners can enhance their ability to view situations from different angles and internalize the discussion process. Mental functions do not only develop through interactions with adults but also during peer interactions. Ausubel suggested that verbal learning can be meaningful and that students can acquire more knowledge in a shorter period through verbal instruction. A prerequisite for meaningful learning is ensuring that learners have prior knowledge of the subject matter (as cited in Özmen, 2004).

Considering that peer interactions enhance student engagement and participation, the peer education approach can be regarded as an interactive learning method (Crouch & Mazur, 2002). Interactive participation techniques involve engaging students with their peers or instructors, providing instant feedback, and enhancing conceptual understanding through both physical and mental involvement (Hake, 1998a). Mazur (1997) argued that interactive teaching methods integrating students are more effective in conceptual teaching than traditional teaching techniques.

The concept of peer teaching first appeared in 1973 when Hungerland developed a sample work model in an office setting (Şekercioğlu, 2011; Yaşar, 2016; Yayla, Yayla & Şimşek, 2017). Hungerland (1973) aimed to modernize office environments through this model, which systematically employed peer education, enabling training without the need for another instructor or teaching material and minimizing risks. In Hungerland's model, applicants first took a placement test, then began learning as trainees, gaining expertise through on-the-job training and peer education. The peer teaching model proposed by Bialek, Taylor, and Hauke (1973) allowed learners to apply what they had learned, ensuring maximum retention through experiential learning. In this method, learners take responsibility for teaching their peers, reinforcing their own understanding and increasing their sense of accountability. Mazur (1997) emphasized that the primary goal of this approach is to direct students' attention to key concepts and leverage peer interactions during lessons.

Mazur refined the peer instruction method based on his experiences teaching physics at Harvard University. He observed that while students could solve mathematical problems, they struggled with conceptual physics questions. Research on how physics students learn different topics highlighted that although traditional instruction methods successfully taught algebraic problem-solving, they did not adequately facilitate the comprehension of fundamental physics concepts.

Peer instruction engages students through a structured questioning process that incorporates all learners (Crouch et al., 2007). According to Latulippe (2016), peer education fosters more positive attitudes, confidence, beliefs, and expectations among students compared to traditional education.

Meltzer and Manivannan (2002) described peer instruction as an approach that facilitates interactive and active student participation in large classrooms. This method encourages students to discuss problems and concepts with their peers, promoting deeper understanding. Gök (2012) emphasized that peer teaching encourages learners to take responsibility for their studies and prioritize comprehension over rote learning.

The effectiveness of peer instruction is rooted in mutual questioning and discussion among students. Additionally, the structure of lessons makes them more engaging for learners, as they can discuss and compare their ideas with classmates. This process reconstructs concepts in a meaningful way (Mazur, 1997; Gök, 2012).

Peer instruction ensures that students grasp fundamental concepts through group discussions. To engage in meaningful discussions and generate ideas, learners must possess basic knowledge and prepare beforehand. They can achieve this by synthesizing the teacher's brief presentations before class (Mazur, 1997). This method enhances conceptual learning and student enjoyment of lessons by breaking topics into smaller parts and evaluating them through conceptual questions. Unlike traditional question-answer sessions, active learning fosters participation from all learners through group discussions. Peer instruction creates a dynamic learning environment where students persuade their peers, engage in conceptual thinking, and actively apply knowledge rather than passively receiving information.

#### 1.7. The Role of Teachers and Students in Peer Instruction

For effective peer instruction, implementation stages must be well-planned and monitored. Teachers have greater responsibilities than learners in this process. Teachers serve as role models in demonstrating how to support students at each instructional step. They select multiple-choice conceptual questions, manage lesson time, oversee the program's execution, monitor student response times, and ultimately explain the correct answers. Teachers must:

1. Set clear objectives for each session,
2. Select relevant activities and materials,

3. Present materials, record responses, and provide feedback,
4. Guide students in understanding the peer teaching model,
5. Encourage competition among learners,
6. Conduct sessions no longer than 30 minutes,
7. Regularly observe and evaluate peer teaching sessions,
8. Inform and guide families on supporting peer education,
9. Consider students' individual needs.

In peer teaching, students are grouped based on their achievement levels. The student assuming the role of instructor prepares beforehand, enhancing their confidence and sense of responsibility. Their task is to explain concepts to their peers and answer related questions. Instead of directly providing answers, they guide their peers toward solutions, encouraging independent problem-solving. Students take on the responsibility of teaching their peers, helping them understand concepts and answer questions. They also actively engage as learners by listening attentively, asking questions, and striving to comprehend the material. Peer instruction fosters a collaborative learning environment where students share knowledge and experiences, challenge each other constructively, and develop communication skills. Actively participating in discussions improves learning outcomes.

### **1.8. Positive Aspects of Peer Teaching**

Student-centered activities enhance students' performance. Studies emphasize that students should not be dependent on the teacher or textbooks but should be encouraged to engage in discussions with their peers. Peer teaching increases students' comprehension and participation regardless of their background knowledge (Mazur, 1997; Şaban, 2004). It enhances conceptual understanding, reduces failure rates, improves student engagement, and fosters positive attitudes toward the course (Mazur, 1997; Lucas, 2009; Porter, Bailey-Lee & Simon, 2013; Beekes, 2006; Deslauriers, Schelew & Wieman, 2011; Noonan & Duncan, 2005). Peer teaching facilitates a reasoning process during classroom discussions, allowing participants to challenge each other and promoting peer interaction (Nicol & Boyle, 2003; Lasry, Mazur & Watkins, 2008; Knight, Wise & Southard, 2013). It enhances problem-solving skills and helps students acquire new concepts through thinking processes. Peer education reduces dropout rates and minimizes gender differences in conceptual learning (Mazur, 1997; Demirel, 2013; Gök, 2015; Lorenzo, Crouch & Mazur, 2006; Miller et al., 2014). Campbell and Erdoğan (2005) reported that individuals in an educational setting feel more motivated and self-confident when working with their peers. Additionally, peer education positively influences young people's self-confidence, communication skills, empathy, academic development, and personal performance (Black & Tobler, 1998). Schmidt (2011) found that peer education increases student satisfaction.

The benefits of peer teaching have been observed across various disciplines, including astronomy, biology (Green, 2013), chemistry (Knight, Wise & Southard, 2013; McKnight, 2015; Smith et al., 2009; Cronhjort, Filipsson & Weurlander, 2013; Ferreira, Nicola & Figueiredo, 2011; Lucas, 2009; Pilzer, 2001), computer science (Golde, Koeske & McCreary, 2006; Özcan, 2017; Yıldırım & Canpolat, 2019; Zingaro & Porter, 2014; Porter, Bailey-Lee & Simon, 2013), physiology (Caceffo, Gama & Azevedo, 2018), and physics (Crouch & Mazur, 2001; Eryılmaz, 2004; Mazur, 1997; Gök, 2018).

### **1.9. Other Benefits of Peer Education**

1. Peers communicate, negotiate, and learn more easily among themselves,
2. The peer group helps individuals develop independence from authority figures,
3. Learners complete tasks at their own pace without comparing themselves to faster learners,
4. Peers create a fun and non-threatening learning environment,
5. The opinions of individuals within the peer group are valued,
6. Peer groups encourage identification with new behaviors,
7. Acquired knowledge and skills become useful for young adults in their daily lives,
8. It provides leadership experiences for young people with leadership skills,
9. Collaboration and teamwork enhance learning,
10. It encourages individuals to take responsibility,
11. Cooperative learning relationships are established through a sense of equal status in the peer group,
12. In cooperative learning, peers assist each other

### **1.10. Project-Based Peer Assessment**

Although it closely resembles task-based Turkish language teaching, it involves the transfer of students' daily learning methods into Turkish language instruction. The primary goal is to develop the four fundamental skills: reading and writing. The socialization aspect of peer assessment is appealing. Keaten and Richardson (1993) support this with their statement, "Peer assessment nurtures interpersonal relationships within the classroom."

However, studies by Dochy et al. (1999) and Falchikov (1995) indicate that students experiencing peer assessment for the first time may face challenges due to a lack of confidence and a tendency to give their friends high scores rather than focusing on performance. This aligns with findings from this study, where students who received low scores expressed concerns such as, "My friends did not grade objectively, so I did not like peer assessment."

Additionally, teachers observing the activity (one science and technology teacher and one classroom teacher) stated, "Due to their age group, students may not be objective. More peer assessment activities are needed for students to develop objectivity."

Peer analysis allows students to evaluate what they have learned and assess their peers objectively. Data were collected based on standard evaluation methods and expressed in percentages. The study initially targeted a specific audience, and results from subsequent studies were presented in a table format.

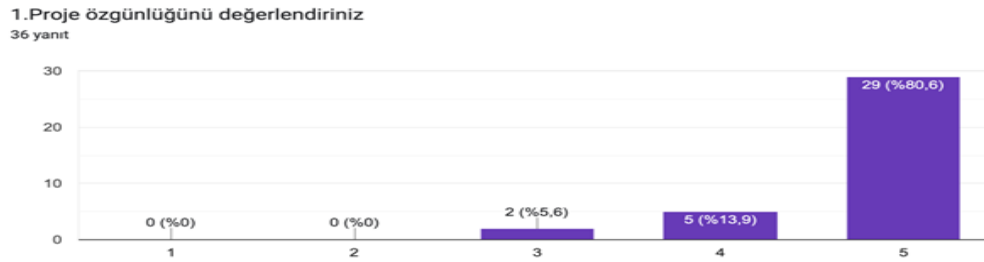
Peer assessment, within the scope of the project, involves students evaluating each other's work. This peer assessment survey collected students' evaluations based on various questions while presenting their work.

### 1.11. Findings and Comments

The peer evaluations of the students' work results are given graphically. It consists of two parts, graphics and Likert scale analysis were done.

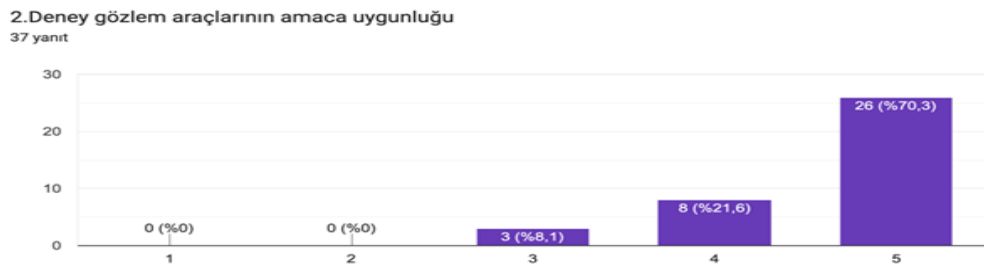
### 1.12. Graph and comments

**Graph 1.1 Evaluating the Uniqueness of the Project**



80% of the respondents rated the uniqueness of the project with a score of 5. The remaining 13% rated it 4 points, and 5% rated it 3 points.

**Graph 1.2 Suitability of Experimental Observation Tools**



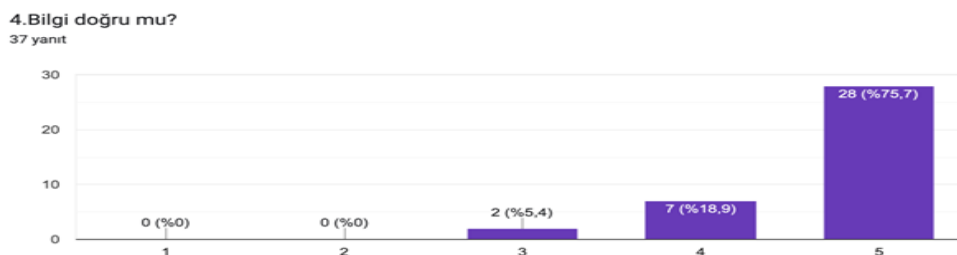
Regarding the suitability of experimental observation tools in peer assessment questions, 70% responded positively with a perfect score of 5. 21% rated it 4 points, and 8% rated it 3 points.

**Graph 1.3 Explanation of the Experiment Method**



For the explanation of the experiment method, 70% gave a full score of 5. 16% rated it 4 points, and the remaining 13% rated it 3 points.

**Graph 1.4 Is the Information Correct?**

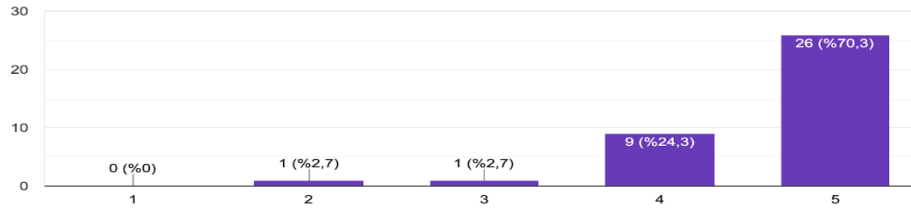


For the accuracy of the information, 75% gave a full score of 5. 7% rated it 4 points, and 5% rated it 3 points.

### Graph 1.5 Determining the Project Topic

5.Projenin konusunun belirlenmesi

37 yanıt

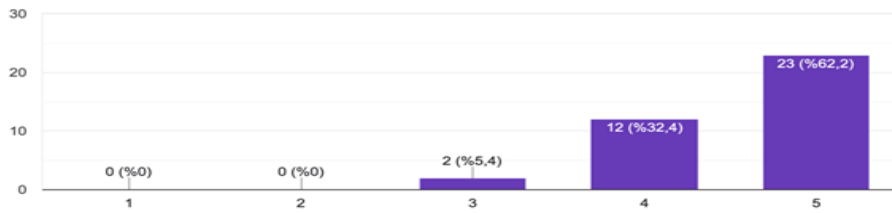


70% rated it 5 points, 24% rated it 4 points, while 2% rated it 3 and 2 points.

### Graph 1.6 Evaluating the Project Work Plan

6.Projenin çalışma planını değerlendiriniz

37 yanıt

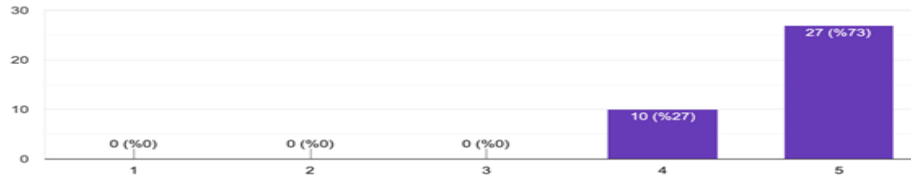


62% rated it 5 points, 32% rated it 4 points, and 2% rated it 3 points.

### Graph 1.7 Evaluating Task Distribution within the Group

7.Grup içindeki görev dağılımını değerlendiriniz

37 yanıt

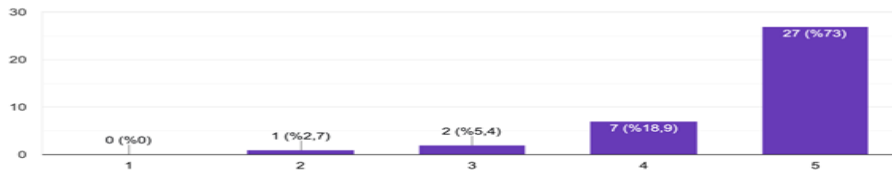


70% rated it 5 points, while 27% rated it 4 points.

### Graph 1.8 Identifying Needs

8.İhtiyaç Belirlenmesi

37 yanıt

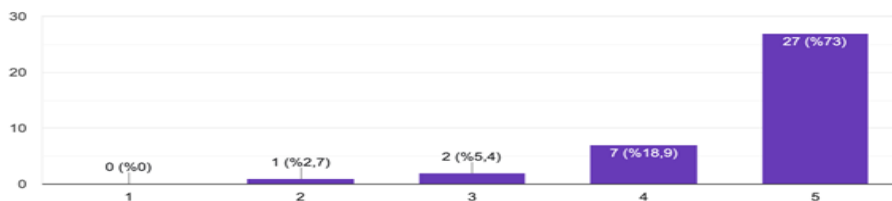


73% rated it 5 points, 18% rated it 4 points, while 5% and 3% rated it 2 points.

### Graph 1.9 Evaluating the Selection of Appropriate Statistics

8.İhtiyaç Belirlenmesi

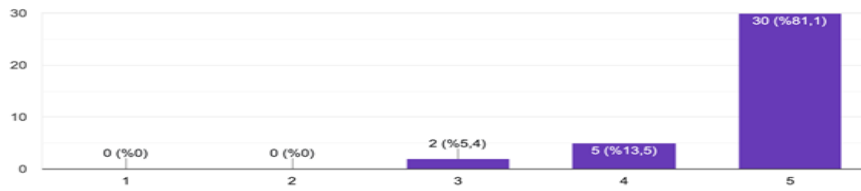
37 yanıt



70% rated it 5 points, 27% rated it 4 points, and 2% rated it 3 points.

### Graph 1.10 Evaluating Data Analysis

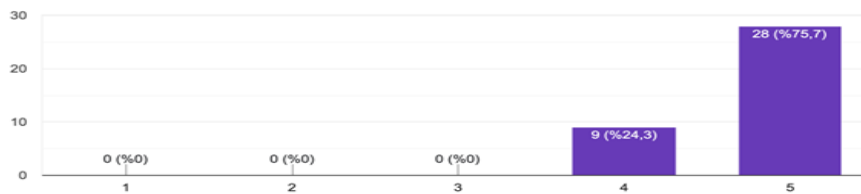
10.Verilerin analizini değerlendiriniz  
37 yanıt



81% rated it 5 points, 13% rated it 4 points, and 2% rated it 3 points.

### Graph 1.11 Evaluating the Presentation of Findings

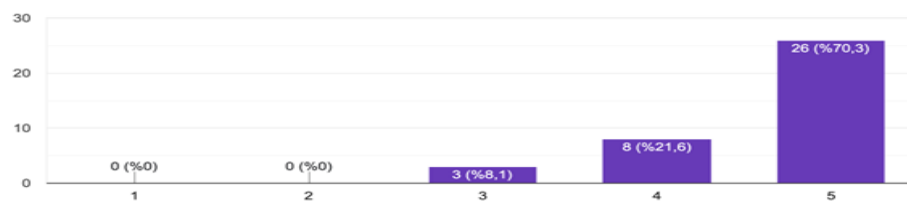
11.Bulguların sunumunu değerlendiriniz  
37 yanıt



75% rated it 5 points.

### Graph 1.12 Evaluating Interpretation of Findings with Sources

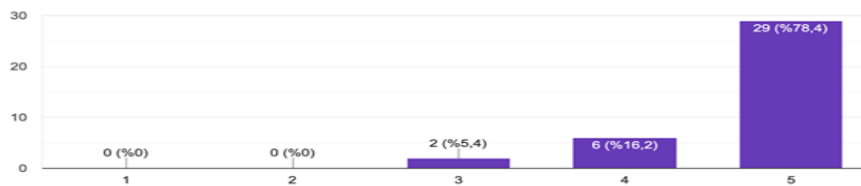
12.Bulguların kaynakla yorumlanmasını değerlendiriniz  
37 yanıt



70% rated it 5 points, 21% rated it 4 points, and 8% rated it 3 points.

### Graph 1.13 Evaluating Suggestions for Future Studies

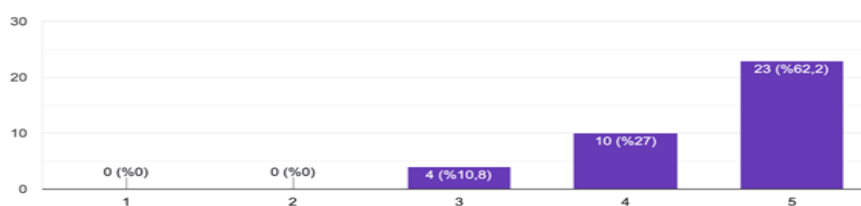
13.Gelecek çalışmalar için önerilerde bulunmalarını değerlendiriniz  
37 yanıt



78% rated it 5 points, 16% rated it 4 points, and 5% rated it 3 points.

### Graph 1.6.14 Evaluating Citation of Sources

14.Kaynakların gösterilmesi değerlendiriniz  
37 yanıt

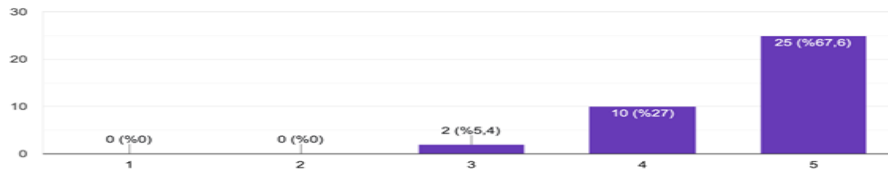


62% rated it 5 points, 27% rated it 4 points, and 10% rated it 3 points.



### Graph 1.6.15 Evaluating Responses to Questions During the Presentation

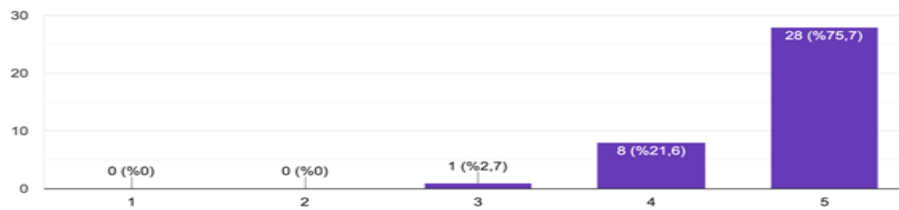
15.Sunu sırasında sorulara cevap vermelerini değerlendirdiniz  
37 yanıt



67% rated it 5 points.

### Graph 1.6.16 Evaluating the Engaging Presentation of the Topic

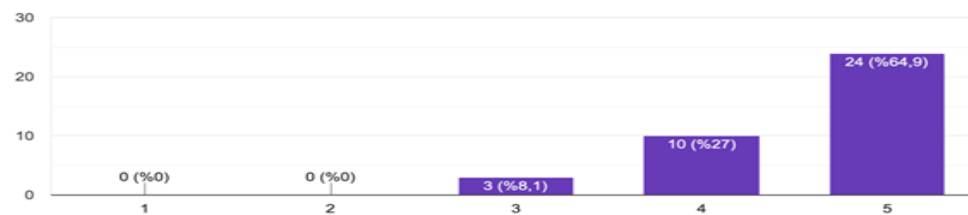
16.Konuyu ilgi çekecek şekilde sunmalarını değerlendirdiniz  
37 yanıt



75% rated it 5 points, 21% rated it 4 points, and 2% rated it 3 points.

### Graph 1.6.17 Evaluating Support of Presentation with Materials

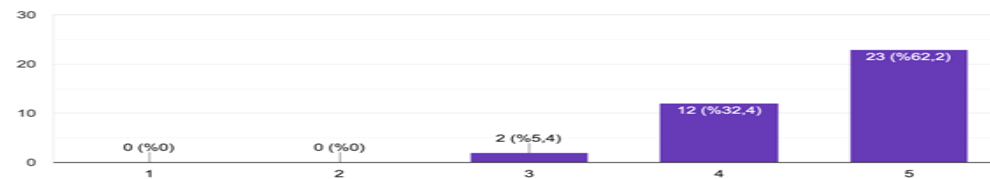
17.Sunuyu materyalle desteklemeyi değerlendirdiniz  
37 yanıt



64% rated it 5 points, 27% rated it 4 points, and 8% rated it 3 points.

### Graph 1.18 Evaluating Language Use and Consistency in Expression During the Presentation

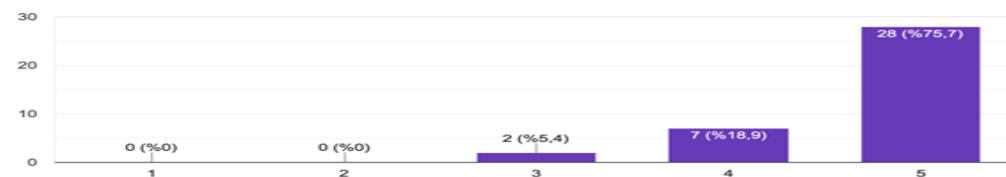
18.Sunumda dil kullanımı ve anlatım tutarlılığı değerlendirdiniz  
37 yanıt



62% rated it 5 points, 32% rated it 4 points, and 5% rated it 3 points.

### Graph 1.19 Evaluating Presentation Within the Given Time

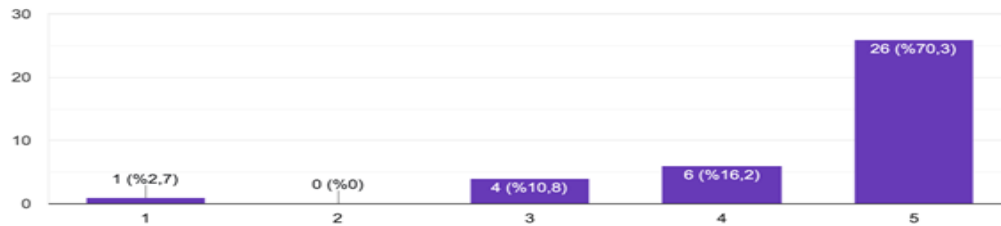
19.Verilen sürede sunuyu yapmalarını değerlendirdiniz  
37 yanıt



75% rated it 5 points, 18% rated it 4 points, and 5% rated it 3 points.

## Graph 1.20 Evaluating Cooperation/Coordination Among Group Members During the Presentation

20.Sunuda grup üyelerinin işbirliği/uyumunu değerlendiriniz  
37 yanıt



70% rated it 5 points, 16% rated it 4 points, 10% rated it 3 points, and 2% rated it 1 point.

Looking at the overall peer assessment, approximately 65-75% of the students were satisfied with their peers' projects. More than 10% gave ratings of 3 or 4 points, while more than 2% gave ratings of 1 or 2 points. This aligns with Stiggins (2007), who stated, "Students should be emotionally engaged in the evaluation process. If a student is emotionally connected to their work, their likelihood of failure is very low. Every student needs to succeed." Thus, it can be inferred that students developed a desire to be seen as successful in the eyes of their peers.

### 1.12. Likert scale analysis

Table 1.1 Likert scale analysis 1

	1	2	3	4	5
1.Proje özgünlüğünü değerlendiriniz	0	0	5,555555556	13,88888889	80,55555556
2.Deney gözlem araçlarının amaca uygunluğu	0	0	8,108108108	21,62162162	70,27027027
3.Deney yöntemi açıklama	0	0	13,51351351	16,21621622	70,27027027
4.Bilgi doğru mu?	0	0	5,405405405	18,91891892	75,67567568
5.Projenin konusunun belirlenmesi	0	2,702702703	2,702702703	24,32432432	70,27027027
6.Projenin çalışma planını değerlendiriniz	0	0	5,405405405	32,43243243	62,16216216
7.Grup içindeki görev dağılımını değerlendiriniz	0	0	0	27,02702703	72,97297297
8.İhtiyaç Belirlenmesi	0	2,702702703	5,405405405	18,91891892	72,97297297
9.Uygun istatistiklerin seçimi değerlendiriniz	0	0	2,702702703	27,02702703	70,27027027
10.Verilerin analizini değerlendiriniz	0	0	5,405405405	13,51351351	81,08108108
11.Bulguların sunumunu değerlendiriniz	0	0	0	24,32432432	75,67567568
12.Bulguların kaynakla yorumlanmasını değerlendiriniz	0	0	8,108108108	21,62162162	70,27027027
13.Gelecek çalışmalar için önerilerde bulunmalarını değerlendiriniz	0	0	5,405405405	16,21621622	78,37837838

Table 1.1 Likert scale analysis 1

14.Kaynakların gösterilmesi değerlendiriniz	0	0	10,81081081	27,02702703	62,16216216
15.Sunu sırasında sorulara cevap vermelerini değerlendiriniz	0	0	5,405405405	27,02702703	67,56756757
16.Konuyu ilgi çekecek şekilde sunmalarını değerlendiriniz	0	0	2,702702703	21,62162162	75,67567568
17.Sunuyu materyalle desteklemeyi değerlendiriniz	0	0	8,108108108	27,02702703	64,86486486
18.Sunumda dil kullanımı ve anlatım tutarlılığı değerlendiriniz	0	0	5,405405405	32,43243243	62,16216216
19.Verilen sürede sunuyu yapmalarını değerlendiriniz	0	0	5,405405405	18,91891892	75,67567568
20.Sunuda grup üyelerinin işbirliği/uyumunu değerlendiriniz	2,702702703	0	10,81081081	16,21621622	70,27027027



**Table 1.2 Likert scale analysis 1**

	Mean Scores
1.Proje özgünlüğünü değerlendiriniz	4,75
2.Deney gözlem araçlarının amaca uygunluğu	4,621621622
3.Deney yöntemi açıklama	4,567567568
4.Bilgi doğru mu?	4,702702703
5.Projenin konusunun belirlenmesi	4,621621622
6.Projenin çalışma planını değerlendiriniz	4,567567568
7.Grup içindeki görev dağılımını değerlendiriniz	4,72972973
8.İhtiyaç Belirlenmesi	4,621621622
9.Uygun istatistiklerin seçimi değerlendiriniz	4,675675676
10.Verilerin analizini değerlendiriniz	4,756756757
11.Bulguların sunumunu değerlendiriniz	4,756756757
12.Bulguların kaynakla yorumlanmasını değerlendiriniz	4,621621622

**Table 1.2 Likert scale analysis 2**

13.Gelecek çalışmalar için önerilerde bulunmalarını değerlendiriniz	4,72972973
14.Kaynakların gösterilmesi değerlendiriniz	4,513513514
15.Sunu sırasında sorulara cevap vermelerini değerlendiriniz	4,621621622
16.Konuyu ilgi çekecek şekilde sunmalarını değerlendiriniz	4,72972973
17.Sunuyu materyalle desteklemeyi değerlendiriniz	4,567567568
18.Sunumda dil kullanımı ve anlatım tutarlılığı değerlendiriniz	4,567567568
19.Verilen sürede sunuyu yapmalarını değerlendiriniz	4,702702703
20.Sunuda grup üyelerinin işbirliği/uyumunu değerlendiriniz	4,513513514

**Table 1.3 Likert scale analysis 1**

#ERROR!	1.Proje özgünlüğünü değerlendiriniz	2.Deney gözlem araçlarının amaca uygunluğu	3.Deney yöntemi açıklama	4.Bilgi doğru mu?
1.Proje özgünlüğünü değerlendiriniz	1	0,8668657974	0,7924058157	0,3799521767
2.Deney gözlem araçlarının amaca uygunluğu	0,8668657974	1	0,6535114827	0,3683907496
3.Deney yöntemi açıklama	0,7924058157	0,6535114827	1	0,48415852
4.Bilgi doğru mu?	0,3799521767	0,3683907496	0,48415852	1
5.Projenin konusunun belirlenmesi	0,5621926349	0,3639056244	0,5571231829	0,3456319875
6.Projenin çalışma planını değerlendiriniz	0,5338517772	0,5729611822	0,5115006112	0,4232862727
7.Grup içindeki görev dağılımını değerlendiriniz	0,2837267954	0,2139599661	0,396243244	0,1110086573
8.İhtiyaç Belirlenmesi	0,6950386035	0,5851159696	0,6852990277	0,3941448344
9.Uygun istatistiklerin seçimi değerlendiriniz	0,4175141617	0,5298618482	0,3464031644	0,3152267432

**Table 1.3 Likert scale analysis 2**

10.Verilerin analizini değerlendiriniz	0,4418604651	0,5230706847	0,3556554417	0,2952094469
11.Bulguların sunumunu değerlendiriniz	0,6113543595	0,6590071189	0,5358038356	0,7075721361
12.Bulguların kaynakla yorumlanmasını değerlendiriniz	0,1998579293	0,2518382353	0,2355868555	0,5968341753
13.Gelecek çalışmalar için önerilerde bulunmalarını değerlendiriniz	0,4418604651	0,4047340271	0,5227906944	0,2629571699
14.Kaynakların gösterilmesi değerlendiriniz	0,3328770247	0,2002959731	0,342700822	0,32686863
15.Sunu sırasında sorulara cevap vermelerini değerlendiriniz	0,4734133388	0,3441128333	0,5103828244	0,3963320898
16.Konuyu ilgi çekecek şekilde sunmalarını değerlendiriniz	0,5523834598	0,3606167767	0,4261256954	0,2898637702
17.Sunuyu materyalle desteklemeyi değerlendiriniz	0,4963405699	0,3993062717	0,417428254	0,3190345283
18.Sunumda dil kullanımı ve anlatım tutarlılığı değerlendiriniz	0,4484354928	0,5008538225	0,3216124244	0,3425564165
19.Verilen sürede sunuyu yapmalarını değerlendiriniz	0,558753201	0,4445385582	0,48415852	0,232718894
20.Sunuda grup üyelerinin işbirliği/uyumunu değerlendiriniz	0,6657983747	0,5878458569	0,559490708	0,4669726908

**Table 1.3 Likert scale analysis 3**

5.Projenin konusunun belirlenmesi	6.Projenin çalışma planını değerlendiriniz	7.Grup içindeki görev dağılımını değerlendiriniz	8.İhtiyaç Belirlenmesi	9.Uygun istatistiklerin seçimi değerlendiriniz	10.Verilerin analizini değerlendiriniz
0,5621926349	0,5338517772	0,2837267954	0,6950386035	0,4175141617	0,4418604651
0,3639056244	0,5729611822	0,2139599661	0,5851159696	0,5298618482	0,5230706847
0,5571231829	0,5115006112	0,396243244	0,6852990277	0,3464031644	0,3556554417
0,3456319875	0,4232862727	0,1110086573	0,3941448344	0,3152267432	0,2952094469
1	0,4022589934	0,4724775628	0,6055470617	0,4201664108	0,5651738857
0,4022589934	1	0,3762134738	0,4440760949	0,5923004449	0,4295454545
0,4724775628	0,3762134738	1	0,2753036898	0,3209833376	0,2890757942
0,6055470617	0,4440760949	0,2753036898	1	0,615255478	0,6044273074
0,4201664108	0,5923004449	0,3209833376	0,615255478	1	0,7730460965
0,5651738857	0,4295454545	0,2890757942	0,6044273074	0,7730460965	1
0,337021132	0,6471209917	0,222354458	0,5843008374	0,6123810989	0,4441082558
0,427718459	0,3566391032	0,5035887007	0,4042026754	0,6118906699	0,5230706847
0,4525280015	0,4668834431	0,4732897525	0,6340349393	0,7258685079	0,5037894677
0,3057712522	0,2807317792	0,1903421059	0,5673851483	0,3910094258	0,3384977415

**Table 1.3 Likert scale analysis 4**

11.Bulguların sunumunu değerlendiriniz	12.Bulguların kaynakla yorumlanmasını değerlendiriniz	13.Gelecek çalışmalar için bulunmalarını değerlendiriniz	14.Kaynakların gösterilmesi değerlendiriniz	15.Sunu sırasında sorulara cevap vermelerini değerlendiriniz
0,6113543595	0,1998579293	0,4418604651	0,3328770247	0,4734133388
0,6590071189	0,2518382353	0,4047340271	0,2002959731	0,3441128333
0,5358038356	0,2355868555	0,5227906944	0,342700822	0,5103828244
0,7075721361	0,5968341753	0,2629571699	0,32686863	0,3963320898
0,337021132	0,427718459	0,4525280015	0,3057712522	0,5974653249
0,6471209917	0,3566391032	0,4668834431	0,2807317792	0,538842092
0,222354458	0,5035887007	0,4732897525	0,1903421059	0,5417844026
0,5843008374	0,4042026754	0,6340349393	0,5673851483	0,6294952717
0,6123810989	0,6118906699	0,7258685079	0,3910094258	0,6583007532
0,4441082558	0,5230706847	0,5037894677	0,3384977415	0,4774099002
1	0,5590757116	0,5207128478	0,3341905681	0,493969031
0,5590757116	1	0,6375085194	0,5771239904	0,6368065076
0,5207128478	0,6375085194	1	0,5112171874	0,602385059
0,3341905681	0,5771239904	0,5112171874	1	0,4857606917
0,493969031	0,6368065076	0,602385059	0,4857606917	1
0,4483265303	0,531678581	0,6144528442	0,4845474323	0,848059315

**Table 1.3 Likert scale analysis 5**

16.Konuyu ilgi çekecek şekilde sunmalarını değerlendiriniz	17.Sunuyu materyalle desteklemeyi değerlendiriniz	18.Sunumda dil kullanımı ve anlatım tutarlılığı değerlendiriniz	19.Verilen sürede sunuyu yapmalarını değerlendiriniz	20.Sunuda grup üyelerinin işbirliği/uyumunu değerlendiriniz
0,5523834598	0,4963405699	0,4484354928	0,558753201	0,6657983747
0,3606167767	0,3993062717	0,5008538225	0,4445385582	0,5878458569
0,4261256954	0,417428254	0,3216124244	0,48415852	0,559490708
0,2898637702	0,3190345283	0,3425564165	0,232718894	0,4669726908
0,6593258826	0,5636592738	0,4699116422	0,274188504	0,6872716785
0,4239788583	0,717743142	0,617768595	0,4232862727	0,7268577626
0,4003121091	0,350380499	0,3762134738	0,002921280456	0,3515265149
0,6989113777	0,5922126392	0,5719423635	0,5291759351	0,7777649838
0,696987495	0,6326229488	0,6792651928	0,2233890306	0,707396786
0,555338782	0,478367145	0,5977272727	0,2952094469	0,5411359313
0,4483265303	0,5040161288	0,5411764045	0,3719289434	0,6109093643
0,531678581	0,4664623265	0,5729611822	-0,01234829328	0,491392213
0,6144528442	0,5880484366	0,6314042755	0,1760873906	0,6126260287
0,4845474323	0,4474905027	0,547067057	0,3971833934	0,4116253721
0,848059315	0,5740917448	0,3836891161	0,2324853041	0,6843168955

### **1.12. Evaluation Report On Project Presentations**

This report includes findings related to the evaluation of project presentations based on specific criteria. The evaluation was carried out across 20 main criteria, and average scores were calculated for each based on the ratings provided by participants. Additionally, correlation analyses were conducted to examine relationships between the criteria.

### **1.13 General Findings**

An examination of the average scores reveals that the project presentations were generally evaluated at a high level. The average scores for all criteria were above 4.5. The highest-rated criteria were:

- Data analysis (Average: 4.76)
- Presentation of findings (Average: 4.76)
- Task distribution within the group (Average: 4.73)
- Presenting the topic in an engaging way (Average: 4.73)
- Suggestions for future work (Average: 4.73)

The criteria with the lowest average scores were:

- Citing sources (Average: 4.51)
- Collaboration/coherence among group members (Average: 4.51)

These results indicate that the projects were generally well-prepared and effectively presented. However, improvements could be made in the areas of source citation and group coordination.

### **1.14. Correlation Analysis Findings**

Several significant correlations were identified between the criteria. For example:

- A strong positive correlation ( $r=0.85$ ) was found between “Presenting the topic in an engaging way” and “Responding to questions during the presentation”. This suggests that an engaging presentation style increases audience interaction.
- A high correlation ( $r=0.72$ ) was also found between “Supporting the presentation with materials” and “Evaluation of the work plan”, indicating that well-planned projects positively affect presentation quality.
- On the other hand, some criteria showed very low or even negative correlations. For instance, there was no significant correlation between “Presenting within the given time” and “Task distribution within the group” ( $r \approx 0.00$ ), which may suggest that time management and task distribution do not always align.

### **1.15. Recommendations**

- Workshops on citation and academic referencing could raise awareness about academic integrity.
- Mentorship during the project process may enhance collaboration and communication within groups.
- Students should be supported in time management, particularly in adhering to presentation durations; rehearsals should be encouraged.
- Efforts should be made to improve language clarity and presentation coherence, guiding students to express themselves more effectively.

Overall, the projects were successful in terms of both content and presentation. It was observed that students adopted a scientific approach and demonstrated critical thinking skills. With targeted improvements in specific areas, the quality of presentations can be further enhanced.

### **1.16. Conclusion**

This evaluation report has examined student project presentations from a multidimensional perspective, identifying both strengths and areas in need of improvement. The findings indicate that students generally demonstrated a solid grasp of their topics, conducted thorough research, and effectively utilized their presentation skills. High levels of success were particularly observed in data analysis, presentation of findings, and division of responsibilities within groups.

However, certain areas such as citation practices and intra-group collaboration revealed opportunities for development, especially in terms of academic and communicative competencies. Providing pedagogical and technical support in these areas is expected to enhance both the quality of presentations and students' academic proficiency.

In conclusion, the project presentation process offered a valuable learning opportunity, enabling students to develop practical skills in critical thinking, collaboration, time management, and academic communication. Considering the suggestions presented in this report may contribute to even more effective outcomes in similar future initiatives.

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