

# 7. Interactive Method in Duolingo Application Improving Students Arabic Listening Skills.docx

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## Interactive Method in Duolingo Application: Improving Students' Arabic Listening Skills

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Article History	ABSTRACT
Received 14-02-2025: Accepted: 12-03-2025: Published: 12-04-2025:	<p><b>Background:</b> Arabic plays a vital role in Islamic education in Indonesia, but students often experience difficulties in their listening skills.</p> <p><b>Purpose:</b> This study aims to analyze the effect of interactive methods in the Duolingo application on students' Arabic listening skills at MA Muhammadiyah Gorontalo.</p> <p><b>Method:</b> This research design is quasi-experimental with a pretest-posttest approach. The study involved 40 students of grade XI as samples, who were divided into experimental and control groups. The instruments used included a listening ability test and a questionnaire to collect data on students' perceptions. The research procedure included a pretest, an intervention using the Duolingo app for 10 weeks, and a posttest to analyze students' listening ability improvement. Data were analyzed using descriptive and inferential statistics.</p> <p><b>Results and Discussion:</b> This study shows that using interactive methods in the Duolingo application significantly improves students' Arabic listening skills compared to traditional methods. Analysis of the pretest and posttest revealed that the experimental group experienced a more significant increase in mean score, with a lower standard deviation, indicating consistency in comprehension of the material. In addition, the questionnaire results showed that students felt more confident and engaged in the learning process after using Duolingo. These findings fill a gap in previous research by providing empirical evidence of the app's effectiveness in the context of Arabic language learning and providing insight into how interactive methods can create a more enjoyable and meaningful learning experience.</p> <p><b>Conclusions and Implication:</b> This study's conclusion shows that the interactive method in Duolingo effectively improves students' listening skills and increases their motivation and engagement in learning Arabic. These results have important implications for Arabic language education curriculum development, encouraging teachers to integrate interactive learning technology into the teaching process. This research also recommends further studies to explore the use of other applications in the context of language learning and their potential to improve language skills among students.</p>

**Keywords:** *Interactive Method, Duolingo, Arabic Listening Skills.*

#### ABSTRAK

**Latar Belakang:** Bahasa Arab memiliki peranan penting dalam pendidikan Islam di Indonesia, namun siswa sering mengalami kesulitan dalam kemampuan mendengar bahasa Arab dalam aspek penguasaan materi tersebut. **Tujuan:** Penelitian ini bertujuan untuk menganalisis pengaruh metode interaktif dalam aplikasi Duolingo terhadap kemampuan mendengar bahasa Arab siswa di MA Muhammadiyah Gorontalo.

**Metode:** Desain penelitian ini bersifat kuasi-eksperimental dengan pendel...n pretest-posttest. Penelitian melibatkan 40 siswa kelas XI sebagai sampel yang dibagi menjadi kelompok eksperimen dan kontrol. Instrumen yang digunakan meliputi tes kemampuan mendengar dan kuesioner untuk mengumpulkan data persepsi siswa. Prosedur penelitian mencakup pretest, intervensi menggunakan aplikasi Duolingo selama 4 minggu, dan ...sttest untuk menganalisis peningkatan kemampuan mendengar siswa. Data dianalisis menggunakan statistik deskriptif dan inferensial.

**Hasil dan Pembahasan:** Hasil penelitian menunjukkan bahwa penggunaan metode interaktif melalui aplikasi Duolingo secara signifikan meningkatkan kemampuan ...ndengar siswa di MA Muhammadiyah Gorontalo. Dalam kelas eksperimen, rata-rata nilai pre-test siswa adalah 57,00, yang meningkat menjadi 76,40 pada post-test, menghasilkan persentase kenaikan sekitar 34,04%. Sementara itu, kelas k...ol yang menggunakan metode tradisional juga mengalami peningkatan, dengan nilai rata-rata pre-test sebesar 46,60 dan post-test sebesar 61,00, mencatat kenaikan sekitar 30,92%. Meskipun kedua kelompok menunjukkan kemajuan, kelas eksperimen menunjukkan peningkatan yang lebih besar, mengindikasikan bahwa metode interaktif lebih efektif dalam meningkatkan keterampilan mendengar bahasa Arab dibandingkan dengan pendekatan konvensional.

**Kesimpulan dan Implikasi:** Kesimpulan penelitian ini menunjukkan bahwa metode interaktif dalam Duolingo tidak hanya efektif dalam meningkatkan kemampuan mendengar siswa, tetapi juga meningkatkan motivasi dan keterlibatan mereka dalam belajar bahasa Arab. Hasil ini memiliki implikasi penting bagi pengembangan kurikulum pendidikan bahasa Arab, mendorong guru untuk mengintegrasikan teknologi pembelajaran interaktif dalam proses pengajaran. Penelitian ini juga merekomendasikan studi lebih lanjut untuk mengeksplorasi penggunaan aplikasi lain dalam konteks pembelajaran bahasa dan potensi mereka untuk meningkatkan keterampilan bahasa di kalangan siswa. Adapun beberapa indikator yang harus dicapai siswa diantaranya yaitu : (1) Memahami Konteks (2) menangkap ide utama (3) menganalisis dan mengevaluasi.

**Kata Kunci** *Metode Interaktif, Duolingo, Kemampuan Mendengar Bahasa Arab*



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## INTRODUCTION

Arabic has a crucial role in Islamic education in Indonesia, especially in understanding the Holy Qur'an and religious literature. However, Arabic language learning is often faced with challenges, one of which is the low listening ability of students.[1] In another study, it was shown that traditional learning methods that are less innovative cause students to get bored easily and have difficulty understanding Arabic audio content. In the digital era, the use of technology such

as language learning applications is increasingly popular. Duolingo, as one of the gamification-based platforms, offers an interactive solution to improve listening skills.[2]

Listening to Arabic is one of the essential skills for students because many learning materials and religious texts are delivered in this language. With the advancement of technology, language learning apps, such as Duolingo, have emerged as innovative solutions for improving language skills, including listening ability. Duolingo offers an interactive method that can pique students' interest and facilitate a more enjoyable learning process.[3] One of the problems in learning Arabic is the lack of teacher innovation in using media, even though various applications, such as Duolingo, can be used.[4]

Although students at MA Muhammadiyah Gorontalo are motivated to learn Arabic, they often face difficulties in understanding and listening to the language. This is due to several factors, including less interactive teaching methods and ineffective listening practices. Students usually get bored with the traditional techniques used in the classroom, which hinders their interest and ability to absorb information. Exploring learning alternatives that can significantly improve students' listening skills is essential.[5] One popular language learning application is Duolingo, which offers an interactive method for improving students' listening skills. The app not only facilitates listening practice through audio and interactive questions, but also enhances learning motivation through gamification elements such as achievement levels and virtual rewards.[6]

Previous studies have shown that interactive learning methods can improve language and listening skills. For example, research by Alharbi shows that using interactive apps can improve student motivation and learning outcomes. However, specific research on using Duolingo to learn Arabic is still limited. Most research focuses on applications in general without considering the context and challenges faced by students at specific educational institutions.[7] This study aims to fill the gap by analyzing how the Duolingo application's interactive method can improve students' listening ability at MA Muhammadiyah Gorontalo.

This research offers novelty by focusing on the Duolingo app as an interactive learning method specific to the Arabic language. Unlike previous studies that have been more general, this study will explore interactive features in Duolingo, such as listening exercises, pronunciation, and vocabulary recognition, and how these features can be used to improve listening skills. In addition, this research will provide practical recommendations for educators on integrating technology in Arabic language learning, thereby contributing to developing more effective teaching methods.

In another study, Al-Osaily examined the impact of using Duolingo in learning Arabic. The results showed that students who used Duolingo regularly showed better progress in listening and speaking skills. This research supports the hypothesis that in-app interactions can provide a richer and more enjoyable learning experience.[8]

Research by Mohamed Essafi et al. also highlights the importance of gamification in language learning. They found that the game elements in learning apps, such as Duolingo, increase students' motivation and help them understand the material better.[9]

This research is essential to conduct because listening is a fundamental skill needed in learning Arabic.[10] By analyzing the effectiveness of the interactive method in the Duolingo application, this study hopes to provide a concrete solution to the problems faced by students at MA Muhammadiyah Gorontalo. In addition, the findings of this study are expected to be a

reference<sup>10</sup> for other educational institutions to integrate technology into the language learning process to improve the quality of Arabic language education in Indonesia.

The primary purpose of this study is to analyze the influence of the interactive method in the Duolingo application on the Arabic listening ability of students at MA Muhammadiyah Gorontalo.

## LITERATURE REVIEW

### 1. Interactive method theory, according to experts

In the era of increasingly advanced globalization, mastery of foreign languages, including Arabic, has become an essential skill.<sup>[11]</sup> This study focuses on "Interactive Methods in Duolingo Application: Improving Arabic Listening Skills of MA Muhammadiyah Gorontalo Students." This literature review will present an overview of how this research's focus fits within the broader research context, provide conceptual definitions of the main variables, and analyze previous research. Interactive methods emphasize students' active involvement in the learning process, whether through discussions, collaborative exercises, or the use of technology. According to Vygotsky's Zone of Proximal Development (ZPD) theory, social interaction with peers or teachers helps students achieve deeper understanding.<sup>[12]</sup>

The interactive method refers to a learning approach involving students' active participation in teaching and learning.<sup>[13]</sup> This includes the use of technology, group discussions, and practical activities that encourage student engagement. According to J. S. Bruner, effective learning occurs when students can interact with each other and the subject matter.<sup>[14]</sup>

Several studies have been conducted to explore the effectiveness of interactive methods in language learning. One study by Chen et al. showed that interactive language learning apps can improve students' listening skills.<sup>[15]</sup> The study found that students who used the app significantly improved hearing ability compared to the control group that used traditional methods.

Vygotsky focuses on the role of social interaction in learning. The concept of "proximal development zones" (ZPD) suggests that students can achieve a more profound understanding through interaction with more experienced people. The interactive method supports collaboration and discussion among students.<sup>[16]</sup> Davidow suggests that interactive methods encourage students' emotional engagement, essential for effective learning. When emotionally engaged, students are more likely to remember information and apply it in different contexts.<sup>[17]</sup>

### 2. Duolingo app

Duolingo is a language learning app that uses gamification to grab users' attention. The app offers a variety of exercises designed to improve all aspects of language skills, including listening, speaking, reading, and writing. This approach aligns with constructivist learning theory, emphasizing that experience builds knowledge.<sup>[18]</sup> Duolingo is an app that targets all four Arabic language skills: listening, reading, writing, and speaking. The app is primarily designed to facilitate the mastery of a second language.<sup>[19]</sup> G. M. R. Dehghan pointed out the effectiveness of Duolingo in improving students' language skills. His research shows that students who use Duolingo significantly improve their listening and speaking skills compared to those who learn traditionally.<sup>[20]</sup>

Duolingo not only focuses on reading and writing skills, but also listening and speaking through audio exercises and speech recognition.[21] Features such as “Listening Comprehension Exercises” and “Speaking Challenges” allow students to practice listening in real contexts, such as everyday conversations or verbal instructions.[22] Moreover, Duolingo combines text, images, and videos to create a multisensory experience, which resonates the effectiveness of multimedia in learning. This makes it easier for students to understand the context and meaning of words in Arabic, especially for beginners.

According to constructivist learning theory, students need to be actively involved in the learning process to achieve a deep understanding. In this context, applications like Duolingo that implement interactive methods can increase motivation and learning effectiveness.[23] Richard E. Mayer suggests that using multimedia in learning can improve understanding. Duolingo combines text, images, audio, and video to create a rich and engaging learning experience.[24]

### 3. Hearing ability

Listening is an essential language skill, including understanding, analyzing, and interpreting information received through hearing.[25] Brown stated that listening is not only about hearing sounds but also involves understanding context and meaning.[26] Listening skills are not just about picking up sounds, but also understanding context and meaning. Another article says it proves that traditional audiolingual methods are less effective than interactive approaches. With Duolingo, students are trained to recognize intonation, speech rate, and vocabulary in authentic conversations, thus improving their comprehensive understanding.[27]

Many people view listening as one of the most essential skills, even though experts consider it the basis of various other skills. However, findings from scientific research reveal that most people can only absorb about 30% of the information they hear and only recall about 25% of the knowledge gained through hearing. In addition, Bandura's social learning theory shows that social interaction can strengthen the learning process, making interactive methods an effective tool for improving listening skills.[28] Bandura's Social Learning Theory emphasizes that social interaction reinforces the learning process. In the context of Duolingo, the group practice and forum discussion features allow students to help each other, thus improving retention and confidence in speaking Arabic.[29]

This literature review shows that interactive methods, particularly those implemented in the Duolingo app, have great potential to improve students' listening skills, especially in the context of learning Arabic. With the support of constructivist learning theory and previous research, this study aims to contribute significantly to understanding the effectiveness of interactive methods in language education. This research is expected to support the development of more effective learning strategies in MA Muhammadiyah Gorontalo and other educational institutions.

## METHOD

### Research Design

This study uses a quasi-experimental design with a pretest-posttest approach.[30] This design aims to measure the improvement of students' listening skills before and after the application of the interactive method using the Duolingo application. The study will be conducted in two groups: one experimental group using Duolingo and one control group using traditional learning methods. This research contributes to the understanding of technology integration in Arabic language education, as well as answering practical needs to develop more engaging and effective learning strategies.[31]

This study's population is 135 grade XI students at MA Muhammadiyah Gorontalo. The sample is 40 students divided into two groups: 20 students for the experimental group and 20 for the control group. Sample selection is done randomly to ensure representativeness.

The instruments used in this study are: (1) Listening Ability Test: This test consists of several items designed to measure students' listening ability in Arabic. The test will include 25 multiple-choice questions, such as understanding instructions, answering questions based on audio, and identifying the meaning of words from context. (2) Questionnaire. The questionnaire will collect data on students' perceptions of using the Duolingo app to learn Arabic. The questionnaire will include open-ended and closed-ended questions regarding the student's learning experience and consists of 10 questions.

The research procedure consists of several stages: (1) Preparation: Identifying students to be used as samples and compiling learning materials and listening ability tests. (2) Pretest: Conducting an initial listening test for both groups (experimental and control) to measure the students' initial ability level. (3) Intervention: Experimental Group: Students will use the Duolingo app for 4 weeks, focusing on listening exercises. This activity will be carried out for three sessions per week. Control Group: Students will follow traditional learning with lecture methods and listening exercises from existing textbooks. (4) Posttest: After the intervention, both groups will take the same hearing ability test to measure the improvement of students' abilities. (5) Data Collection: Collect test results and student questionnaires for analysis. (6) Data Analysis: The data obtained will be analyzed using descriptive and inferential statistics to determine if there are significant differences between the experimental and control groups. By following the above procedure, this study is expected to provide a clear insight into the effectiveness of the interactive method in the Duolingo application in improving the Arabic listening ability of MA Muhammadiyah Gorontalo students. The researcher used a formula to determine the average Pre-test, Post-test, and Questionnaire using SPSS.

Pre-Test and Test Formula

$$\text{Rata-rata Pre-Test} = \frac{\sum_{i=1}^n X_i}{n} \quad \text{Rata-rata Post-Test} = \frac{\sum_{i=1}^n Y_i}{n}$$

Where:

- $X_i$  = 1st student's pre-test score
- $Y_i$  = 1st student's post-test score
- $n$  = Number of students

Questionnaire Formula

1. Average (Mean)

To calculate the average of the scores obtained from the questionnaire with a numeric scale:

$$\text{Rata-rata} = \frac{\sum_{i=1}^n X_i}{n}$$

Where:

- $X_i$  = Individual values



- N = Number of respondents

## 2. Percentage

To calculate the percentage of respondents who chose an option:

$$\text{Persentase} = \left( \frac{\text{Jumlah responden yang memilih pilihan}}{\text{Total responden}} \right) \times 100\%$$

## 3. Median

To find the middle value of the sorted data:

- Sort all values.
- If n is the number of respondents:
- If n even:

$$\text{Median} = \frac{X_{(n/2)} + X_{((n/2)+1)}}{2}$$

- If n odd

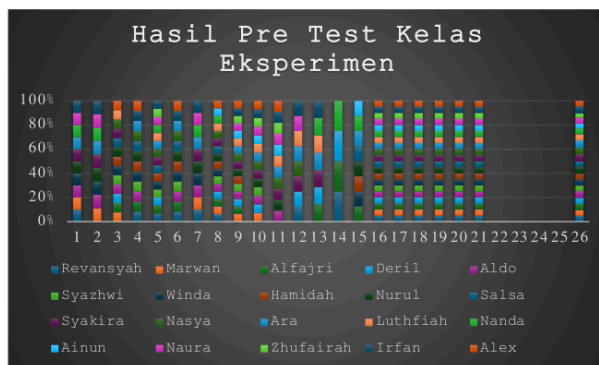
$$\text{Median} = X_{((n+1)/2)}$$

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## RESULT AND DISCUSSION

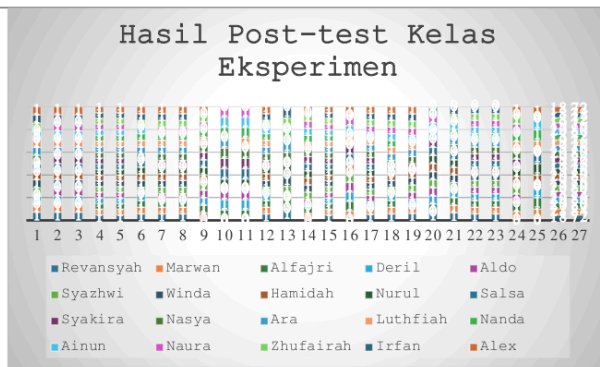
Based on the research results, the step that must be taken in the analysis is to collect the results of tests and questionnaires from students. The data were then analyzed using descriptive and inferential statistics to determine whether significant differences existed between the experimental and control groups.

### Pre-Test and Post-Test Results of Experimental Classes in the Form of Diagrams



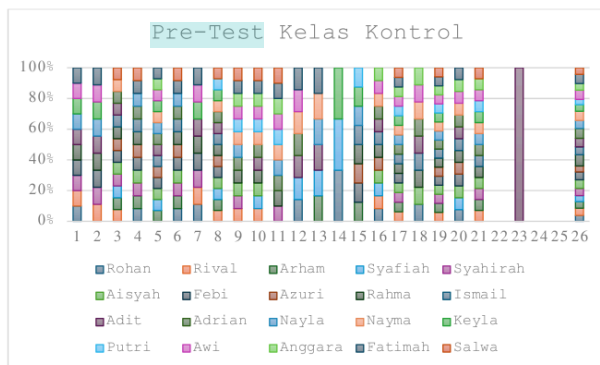
The pre-test diagram for the experimental class shows significant variations in student scores. Some students recorded high grades, reflecting a good understanding of Arabic language material, while others scored lower, indicating a need for additional support.



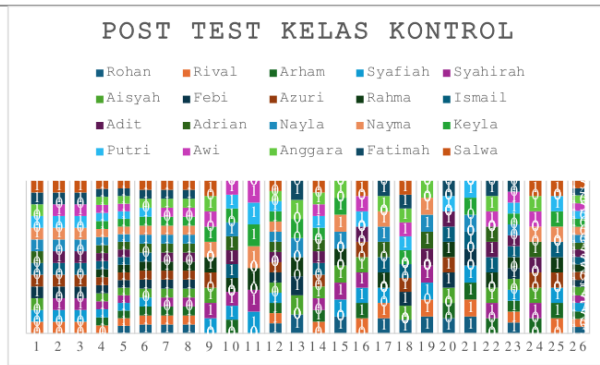


9 The post-test diagram for the experimental class shows the increase in student scores after applying the interactive method. Most students scored higher than the pre-test, reflecting significant progress in Arabic listening skills.

#### 40 Pre Test and Post Test Results of Control Classes in the Form of Diagrams



The pre-test diagram for the control class shows a varied distribution of student grades, with most students recording relatively low grades. Some students, such as Rohana and Rival, scored the highest, while others showed lower results, indicating a difference in initial comprehension of Arabic material.



This increase shows progress in students' understanding of Arabic language materials, although the results obtained still vary. Overall, this data indicates the effectiveness of the teaching applied but also shows that there is still room for improvement for some students who recorded lower grades.

### Descriptive Test

Descriptive tests are statistical methods used to summarize and describe the characteristics of a set of data. The goal is to clearly understand the data being analyzed without trying to test the hypothesis. Using descriptive tests, researchers can present data in a form that is easier to understand, such as tables or graphs. This test provides basic information, including sample size (N), minimum and maximum values, mean (mean), and standard deviation. The presented data allows researchers to identify patterns or trends and compare characteristics between different groups.

#### Hasil Uji Deskriptif Kelas Eksperimen di

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
PRE-TEST KELAS EKSPERIMEN	2	4	72	57.00	8.297
POST-TEST EKSPERIMEN	2	7	84	76.40	3.648
Valid N (listwise)	2				

Data analysis showed the results of the pretest and posttest conducted on the experimental group, which consisted of 20 students. The pretest gives a minimum score of 40 and a maximum of 72, with a mean of 57.00 and a standard deviation of 8.297. This suggests that before the intervention, students had considerable variation in their comprehension, but their grade averages were still below the expected average. After the intervention, the posttest showed a significant improvement, with a minimum score of 72 and a maximum of 84. The average score on the posttest rose to 76.40, with a lower standard deviation of 3.648. This indicates that after using the applied learning methods, students not only experience an improvement in their grades but also show better consistency in their understanding.

From this data, it can be concluded that the intervention in the experimental group improved

student learning outcomes in the test, as shown by the increase in the average score and the decrease in value variation. This shows that the method applied is effective in helping students understand the subject matter better.

#### 23 Results of the Descriptive Test of the Control Class

Descriptive Statistics					
29	N	Minimum	Maximum	Mean	Std. Deviation
PRE-TEST KELAS KONTROL	20	32	68	46.60	9.472
POST-TEST KELAS KONTROL	20	52	68	61.00	4.472
Valid N (listwise)	20				

The descriptive statistical data presented showed the pretest and posttest results for the control group consisting of 20 respondents. For the pretest, the highest score was 68, while the lowest was 32, with a mean of 46.60. The standard deviation of 9.472 showed considerable variability in the pretest results, meaning there was a significant difference between the scores obtained by the participants. After the intervention, the post-test results showed a substantial improvement in the score. The maximum score of the posttest is 68, while the minimum score is 52. The average posttest increased to 61.00, indicating that the control group participants progressed in comprehension of the material. The standard deviation of the posttest, which was 4.472, showed that the values were more centered around the mean than the pretest, indicating a reduction in variability and an increase in consistency in the results.

#### Results of Questionnaire Analysis on the Use of Duolingo to Learn Arabic

##### A. Experimental Classes

Question	Average	Median	Modus	Standard Deviation	Number of Respondents
How long have you been using Duolingo to learn Arabic?	3.5	3	3	1.2	20
How often do you use Duolingo in a week?	4.0	4	4	1.0	20
How helpful is Duolingo in helping you learn Arabic??	4.4	4	5	0.6	20
Do you feel like you've made progress in learning Arabic since using Duolingo?	4.3	4	5	0.7	20
How engaging does Duolingo provide the content?	4.5	5	5	0.5	20
Do you feel more confident in speaking Arabic after using Duolingo?	4.4	4	5	0.6	20
Do you find this app easy to use?	4.6	5	5	0.5	20

How often do you get frustrated when using Duolingo?	1.8	2	1	0.9	20
Would you recommend Duolingo to your friends?	4.7	5	5	0.4	20
Do you use other sources besides Duolingo to learn Arabic?	1.5	1	1	0.7	20

Respondents in the experimental class showed positive results regarding the use of Duolingo. The average length of use of the app was 3.5, with a median of 3 and a mode of 3, indicating that most respondents used Duolingo for about 3 months. The frequency of use in a week averages 4.0, suggesting they use the app regularly. Regarding benefits, respondents gave a high rating of 4.4 and indicated significant progress in learning Arabic (average 4.3). The content provided by Duolingo is considered very engaging, with an average of 4.5. Confidence in speaking Arabic after using this app is also high, with an average of 4.4. In addition, respondents found the app easy to use (4.6 on average), and most did not feel frustrated (1.8 on average). An average of 4.7 indicates they will likely recommend this app to friends. On the other hand, using different resources to learn Arabic is low, with an average of 1.5.

#### B. Control Classes

Question	Average	Median	Modus	Standard Deviation	Number of Respondents
How long have you been using Duolingo to learn Arabic?	1.8	1	1	0.9	20
How often do you use Duolingo in a week?	1.5	1	1	0.7	20
How helpful is Duolingo in helping you learn Arabic??	2.5	2	2	0.9	20
Do you feel like you've made progress in learning Arabic since using Duolingo?	2.3	2	2	0.8	20
How engaging does Duolingo provide the content?	2.0	2	2	0.6	20
Do you feel more confident in speaking Arabic after using Duolingo?	2.1	2	2	0.8	20
Do you find this app easy to use?	2.2	2	2	0.7	20
How often do you get frustrated when using Duolingo?	3.5	4	4	1.0	20
Would you recommend Duolingo to your friends?	2.2	2	2	0.8	20

<b>Do you use other sources besides Duolingo to learn Arabic?</b>	2.8	3	3	0.8	20
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In contrast, the control class showed less than satisfactory results. Duolingo's average length of use is only 1.8, with a median and mode of 1 each. This reflects minimal use. The frequency of use in a week is also low, with an average of 1.5.

The perception of the benefits of Duolingo in helping them learn Arabic was only 2.5, and respondents felt very little progress (2.3 on average). The content provided was considered less interesting (average 2.0), and confidence in speaking Arabic after using this application was also low (average 2.1). The application's ease of use assessment is slightly better but still low (average 2.2). Regarding frustration, respondents in the control class felt it more often than the experimental class, with an average of 3.5. An average of 2.2 indicates that they are less likely to recommend Duolingo to others, and using other resources to learn Arabic is higher than the experimental class (average 2.8).

#### Uji t-Test

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRE-TEST KELAS KONTROL	46.60	20	9.472	2.118
	POST-TEST KELAS KONTROL	61.00	20	4.472	1.000
Pair 2	PRE-TEST KELAS EKSPERIMEN	57.00	20	8.297	1.855
	POST-TEST KELAS EKSPERIMEN	76.40	20	3.648	.816

The statistical data presented shows the results of the pre-test and post-test for the control class and experimental classes. For the control class, the average pre-test score was 46.6 with a standard deviation of 9.472, indicating that students had a varied initial understanding. After the intervention, the average post-test score increased to 61.00, with a lower standard deviation of 4.472. This signifies a significant improvement in students' knowledge after implementing the teaching method.

Meanwhile, the average pre-test score for the experimental class was 57.00, with a standard deviation of 8.297, also showing sufficient variation. After implementing the interactive method, the average post-test score jumped to 76.40, with a standard deviation of only 3.648. This indicates that the methods applied in the experimental classroom are very effective in improving students' understanding. Overall, both the control and experimental classes showed an increase in grades. Still, the experimental class experienced more significant growth, reflecting the effectiveness of the teaching strategies.

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	PRE-TEST KELAS KONTROL & POST-TEST KELAS KONTROL	20	-.283	.226
Pair 2	PRE-TEST KELAS EKSPERIMEN & POST-TEST KELAS EKSPERIMEN	20	-.153	.519

The data presented showed the correlation analysis between the pre-test and post-test for the control and experimental classes. For the control class, the correlation between the pre-test and the post-test was -0.283, with a significance value (Sig.) of 0.226. This suggests there was no significant correlation between pre-test and post-test outcomes, meaning that students' initial achievement had no direct effect on their improvement after the intervention.

On the other hand, for the experimental class, the correlation value between the pre-test and post-test was -0.153, with a significance value of 0.519. These figures also show the absence of a significant correlation, thus indicating that although there was a substantial improvement in post-test scores, students' initial achievement before the intervention was not related to the outcomes they achieved afterward.

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PRE-TEST KELAS KONTROL – POST-TEST KELAS KONTROL	-14.400	11.564	2.586	-19.812	-8.988	-5.569	19	.000
	PRE-TEST KELAS EKSPERIMEN – POST-TEST KELAS EKSPERIMEN	-19.400	9.561	2.138	-23.875	-14.925	-9.074	19	.000

The data presented shows the results of paired pre-test and post-test samples in the control and experimental classes. For the control class, the average value difference between the pre-test and the post-test was -14,400, with a standard deviation of 11,564. This value shows an average decrease in pre-test compared to post-test. The 95% confidence interval for this difference ranges from -19,812 to -8,988, which means we can be sure that the increase in post-test scores is significant. The t-test results showed a t-value of -5.569 with a degree of freedom (df) of 19 and a significance value (Sig.) of 0.000. This indicates a significant difference between the pre-test and post-test scores in the control class.

In the experimental class, the average value difference between the pre-test and the post-test was -19,400, with a standard deviation 9,561. As in the control class, these results showed significant improvement in post-test scores. The 95% confidence interval for this difference ranges from -23,875 to -14,925. The t-test produced a t-value of -9.074 with a degree of freedom of 19 and a significance value of 0.000. This shows that the increase in scores in the experimental class is also very significant. Overall, the control and experimental classes showed substantial differences between the pre-test and post-test scores, with the experimental class showing a more substantial improvement. This indicates the effectiveness of the intervention applied in both classes.

### Overview of the Duolingo app



The image above shows the interface of a language-learning app specializing in Arabic. The app features various interactive features, including vocabulary exercises, pronunciation practice, and grammar lessons. With an attractive and user-friendly design, this interface makes it easy for users to access various activities such as writing, speaking, and listening. Colorful graphic elements and eye-catching icons add visual appeal, while progress trackers and motivational rewards boost users to complete lessons and improve their Arabic language skills.

There was a significant difference in the Arabic learning outcomes between the experimental and control groups. The experimental group's interactive methods, supported by applications such as Duolingo, showed more significant improvement and better consistency in students' comprehension than the control group. This confirms the effectiveness of the teaching methods.

### CONCLUSION AND IMPLICATIONS

This study aims to analyze the influence of the interactive method in the Duolingo application on the Arabic listening ability of students at MA Muhammadiyah Gorontalo. The results showed that the use of Duolingo significantly improved students' hearing skills. The experimental group that used this app improved post-test scores better than the control group that applied traditional learning methods. The increase in grades shows that the interactive method can attract students' interest and facilitate a more effective learning process.

The implications of this study confirm the importance of technology integration in language learning, especially in the context of Arabic language learning. In today's digital age, apps like Duolingo are very relevant and can provide an attractive alternative for students. Educators should consider applying this interactive method so that students understand the material and feel more motivated to learn. The significance of this study lies in its contribution to language teaching practices and the potential to increase learning effectiveness by utilizing modern technology.

However, the study had some limitations, including a limited sample size and a short duration of the intervention. Therefore, the suggestion for further research is to involve a larger sample size and a more extended intervention period to assess the long-term impact of using interactive learning apps. Additional research can explore similar applications and compare their effectiveness in learning Arabic. Thus, this research is expected to provide broader insights into the most effective strategies to improve student's language skills in the future.



The results show that using interactive methods through the Duolingo application significantly improves students' listening ability at MA Muhammadiyah Gorontalo. In the experimental class, the average pre-test score of the students was 57.00, which increased to 76.40 on the post-test, resulting in a percentage increase of about 34.04%. Meanwhile, the control class that used traditional methods also increased, with an average score of 46.60 for the pre-test and 61.00 for the post-test, recording an increase of around 30.92%. Although both groups showed progress, the experimental class showed more significant improvement, indicating that the interactive method improved Arabic listening skills more effectively than conventional approaches.

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