



Emotional Semantic in Indonesian: A Literature Study on Facial Expressions and Body Language

Andri Purwanugraha

¹Program Studi Pendidikan Bahasa dan Sastra Indonesia, Universitas Mandiri, Subang, Jawa Barat, Indonesia

*E-mail: andripurwanugraha22@gmail.com

ABSTRAC

This study aims to analyze the relationship between emotional semantics in the Indonesian language and the expression of emotions through facial expressions and body language as components of nonverbal communication within the Indonesian cultural context. Employing a descriptive qualitative approach and a literature review method, this research examines the concepts of emotional semantics, facial expression theories, body language, and multimodality based on linguistic, psychological, and communication studies. The findings indicate that emotional meaning in Indonesian is contextual, gradational, and strongly influenced by cultural norms that emphasize social harmony and politeness. Facial expressions and body language play a crucial role as nonverbal markers that clarify, reinforce, or even modify verbal meaning. These results demonstrate that the analysis of emotional semantics must account for the integration of verbal and nonverbal channels, highlighting the necessity of a multimodal approach to understanding emotional representation in Indonesian communication.

Keywords: emotional semantics, literature study, expressions language, body language

Semantik Emosi dalam Bahasa Indonesia: Studi Literatur pada Ekspresi Wajah dan Bahasa Tubuh

ABSTRAK

Penelitian ini bertujuan untuk menganalisis keterkaitan antara semantik emosi dalam Bahasa Indonesia dengan ekspresi wajah dan bahasa tubuh sebagai bagian dari komunikasi nonverbal dalam konteks budaya Indonesia. Dengan menggunakan pendekatan deskriptif kualitatif dan metode studi literatur, penelitian ini mengkaji konsep-konsep semantik emosi, teori ekspresi wajah, bahasa tubuh, serta multimodalitas berdasarkan literatur linguistik, psikologi, dan komunikasi. Hasil kajian menunjukkan bahwa makna emosional dalam Bahasa Indonesia bersifat kontekstual, gradasional, dan kuat dipengaruhi oleh norma budaya yang menjunjung harmoni sosial dan kesopanan. Ekspresi wajah dan bahasa tubuh terbukti memainkan peran penting sebagai penanda nonverbal yang memperjelas, memperkuat, atau bahkan memodifikasi makna verbal. Temuan ini menegaskan bahwa analisis semantik emosi harus mempertimbangkan integrasi antara bahasa verbal dan nonverbal, serta memperlihatkan perlunya pendekatan multimodal dalam memahami representasi emosi dalam komunikasi masyarakat Indonesia.

Keywords: semantik emosi, studi literatur, ekspresi wajah, bahasa tubuh

Submitted
09/12/2025

Accepted
21/01/2026

Published
23/01/2026

Citation	Purwanugraha, A. (2026). Emotional Semantic in Indonesian: A Literature Study on Facial Expressions and Body Language. <i>Jurnal Pembelajaran Bahasa dan Sastra, Volume 5, Nomor 1, Januari 2026, 611-624. DOI: https://doi.org/10.55909/jpbs.v5i1.1127</i>
----------	---

Publisher
Raja Zulkarnain Education Foundation

INTRODUCTION

The recent development of digital technology has had a significant impact on the world of education, including foreign language learning. With the increasing use of mobile devices such as smartphones (Abdulrahman, 2025) and tablets, learning has become easier and is no longer limited to classrooms or face-to-face meetings. This change allows students a more independent and flexible learning experience that suits their individual needs. Regarding foreign language proficiency, listening skills play a crucial role as they form the foundation for developing speaking, reading, and writing skills (Oktasari, 2023 & Asty et al., 2025).

However, these skills require extensive exposure to the language, which is learned through various forms of authentic audio material. In practice, many students find it difficult to optimally improve their listening skills. These challenges can arise from limited exposure to real conversations, a scarcity of audio sources with different accents, or the very fast pace of native speakers (Baharun et al., 2024). Furthermore, traditional methods typically provide listening exercises through static recordings, which are less interactive and do not allow for repetition in different contexts. Learning to listen is less efficient and does not meet the needs of students who desire flexibility and variety in learning resources (Syafei, 2019).

The use of mobile learning applications has become attractive to many people. These applications provide more interactive listening exercises, offer authentic conversational materials, and allow users to repeat materials according to their needs. Two options are available: BUSUU and MONDLY (Taquiem, 2025). MONDLY is popular due to its interactive learning design, organized materials, and ease of access.

BUSUU is known for its strong visual approach, use of speech recognition technology, and topical dialogues designed to help in a community-based learning experience (Imam et al., 2025, Huda). My factor, allowing users to practice their listening skills through diverse communication activities Although both

applications offer features that support improved listening skills, the effectiveness of each has not been fully measured compared to the other.

Previous studies (Mendoza et al., 2020) have shown that mobile learning can increase motivation, engagement, and language learning outcomes.

Babbel, Memrise, and Duolingo can be used. Several studies indicate that apps like (2025) improve vocabulary mastery and listening comprehension. However, most of these studies focus more on evaluating the MONDLY app. Studies on (Gajda, 2024) are still largely descriptive in nature, generally focusing on user satisfaction, ease of use, or overall language learning proficiency, without comparing the advantages or disadvantages of the platforms.

The limitations of previous research offer an opportunity for more in-depth investigations into the effectiveness of these two apps in listening skills. There are still few studies that use objective, specific listening indicators (Tai & Chen, 2021) to measure improvement in listening skills, such as listening test scores, the ability to identify key information, or understanding native dialogue. Furthermore, there have not been many studies that identify specific listening comprehension indicators. Hijriyah et al. clearly outlined the features of applications that significantly contribute to improving listening skills. MONDLY. According to Benlaghrissi & Ouahidi (2025), there is a research gap that can be filled by a systematic comparative study between BUSUU and MONDLY. The increasing interest among learners in using mobile devices makes this study relevant from both a practical and academic perspective. Learners are looking for information that can help them choose the best application to improve their listening skills, while teachers need empirical data to recommend the use of specific platforms as part of language teaching methodologies (MALL).

Academically, this study is important (Benlaghrissi & Ouahidi, 2025) to expand the literature on the effectiveness of MALL in improving listening skills. Therefore, this study was designed to analyze and compare the impact



of two applications on improving listening skills among language learners. This study does not focus on learning outcomes from a quantitative perspective. This study not only examines the factors within applications that contribute to a high-quality audio learning experience, but also explores the underlying mechanisms. By combining test data, application usage observations, and learning feature analysis, it is hoped that this study will provide a comprehensive understanding of how these two applications contribute to the development of listening skills.

Through this approach, this study not only fills gaps in existing research but also offers practical benefits for users and application developers. It is hoped that the results of this study will help learners choose the application that best suits their needs, provide recommendations for educators on mobile-based learning strategies, and offer input for developers to improve the quality of the audio learning experience in their applications. Overall, this study aims to enhance understanding of the effective use of mobile technology in improving listening skills, which is a crucial part of the broader field of learning. It is important to master the foreign language.

METHOD

This study adopted a quantitative method with a quasi-experimental design using a non-equivalent control group design. (Alsaiani, 2025) on Arabic listening skills: Busuu and Mondly, to compare the effectiveness of two applications. Two treatment groups used each application for a specific period and then evaluated through prior and follow-up tests. A total of 75 participants were selected from Class 1, considering their similar initial abilities, the availability of tools, and their commitment to participating in the study. The participants were divided into two groups of 30 people each: Busuu used one group, and Mondly used the other. The purpose of this division was to maintain fairness in the test so that an objective comparison could be made between the learning outcomes. The learning outcomes were compared using the two Mondly applications.

Alsaiani (2025) The data were collected through a listening test consisting of multiple-choice and short-answer questions, with audio from native Arabic speakers. This test was used to measure participants' ability to recognize. The accuracy and reliability of the tools were tested (Cheng, 2004) on vocabulary, phrase and sentence comprehension, and the interpretation of short dialogues through expert evaluation and internal testing before use with participants. In addition to the tests, observations were made to document the time spent using the application, the types of exercises performed, and participant consistency throughout the learning process. These observations ensured that the intervention was implemented consistently and followed established research procedures. The data were analyzed using normality and homogeneity tests and parametric statistical tests to assess improvements in learning outcomes. A paired-samples t-test was used to analyze differences in ability. An independent samples t-test was used to compare pre- and post-treatment results in each group (Park et al., 2020) based on the post-test results. The researchers also calculated the Busuu and Mondly gain scores to measure the level of improvement in each group in more detail. Through this analysis, this study provides quantitative evidence regarding the most effective application for improving Arabic listening skills.

RESULTS

1. Developing Listening Skills Using Mondly

The results of the descriptive analysis using paired-samples statistics show a significant improvement in listening skills after participants engaged in learning using a mobile application. The mean score on the initial test was 49.80 (Figure 1), indicating that the participants' initial ability to understand spoken Arabic was still in the low-to-medium range. This mean suggests that the participants had not yet mastered basic skills such as vocabulary recognition, simple phrase comprehension, and sentence interpretation all crucial components of listening skills before the intervention. The standard deviation of the initial

test, 4.586, indicates that the participants' initial abilities were homogeneous, with little range of variance between individuals. This homogeneity is significant because it demonstrates that the group was at a relatively similar starting point, allowing for a more direct attribution of any changes to the intervention provided.

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pretest	49,80	15	4,586	1,184
	post-test	79,13	15	6,368	1,644

Figure 1
 SPSS Screenshot of the Results of Statistical Calculations of Paired Samples of Listening Skills Data Using Mondly

Following the intervention, which involved using a mobile application for a specific period, the mean post-test score increased significantly to 79.13 (Figure 1). This 29.33-point increase strongly suggests that digital application-based learning interventions have a positive impact on the development of participants' listening skills. In addition, the post-test standard deviation rose to 6.368, reflecting the variability in skill improvement among participants. This variation may be attributable to differences in the duration of participants' engagement, the intensity of their practice, or their level of adaptation to the features offered by the application. Despite the increased variability, the overall trend still indicates that the majority of participants experienced a significant improvement in their skills.

When quantitatively comparing the results, the mean difference between the initial and final tests demonstrates a substantial educational change. Although this analysis was conducted descriptively at this stage, such a significant increase generally has the potential to yield very strong statistical significance when tested using a paired-samples t-test, typically with a p-value of < 0.05. This suggests that the changes were not accidental but rather a genuine result of the learning process facilitated by the application. Therefore, it can be

concluded that using mobile learning media can provide a more immersive and interactive learning experience, ultimately contributing to improved students' listening skills.

The implications of these findings are highly significant in the context of Arabic language teaching. Learning listening comprehension, which has thus far relied solely on traditional methods, has proven to have its limitations, particularly regarding access to authentic audio input. Using apps like Mondly or Busuu allows students to access more diverse and higher-quality audio content, while simultaneously providing structured exercises that can be accessed anytime. This aligns with previous research indicating that mobile device use can increase student motivation, practice frequency, and retention of foreign language learning materials. The results of this study reinforce this view and provide concrete evidence that digital media can overcome the shortcomings of traditional learning, especially in listening skills, which require repetition, varied input, and multimedia interaction.

Overall, this discussion demonstrates that using mobile apps is not merely an add-on but can also serve as an effective primary teaching tool for improving students' listening skills. The significant increase in scores, coupled with the shift in learners' abilities from standardized to more diverse, suggests that mobile apps offer a space for more personalized and adaptive learning. These findings also open up opportunities for further research to evaluate the most effective apps and the most appropriate usage strategies within the context of Arabic language learning in formal education.

		N	Correlation	Sig.
Pair 1	pretest & post-test	15	0,272	0,326

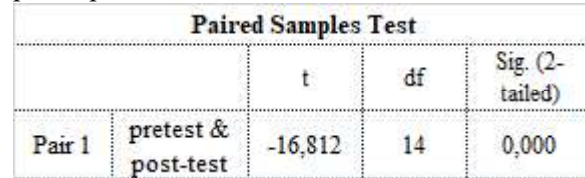
Figure 2
 SPSS screenshot of the results of calculating paired sample correlation of listening skills data using Mondly

The results of the pairwise correlation analysis show that the relationship between the preliminary and final test scores is 0.272 with a significance level of 0.326. This low correlation coefficient indicates that the participants' initial abilities did not significantly influence their performance after using the app. This means that the improvement in listening skills was not dependent on their initial scores. Participants who scored high or low on the preliminary test achieved significant improvement after learning through the app.

Furthermore, since the significance level of 0.326 is greater than 0.05, the relationship between the preliminary and final tests is not statistically significant. This means that the final test results were more influenced by the use of the Mondly or Busuu app during learning than by the participants' initial abilities. Thus, app use played a major role in improving participants' listening skills, compared to their initial ability levels. These results demonstrate that both apps are capable of providing an effective learning experience for all participants, regardless of their ability levels.

This finding aligns with the results of the Godwin-Jones study, which states that mobile app-based learning provides a personalized learning experience that can be adapted to participants' needs, allowing individuals of varying abilities to progress at their own pace. Burston's study also indicates that mobile apps are designed to support independent learning with progressively increasing difficulty, thus minimizing differences in participants' initial abilities. Al-Jarf's research adds that interactive audio content in mobile apps can improve listening skills, particularly for participants with lower initial abilities, thanks to repetition, speed control, and automatic feedback. Therefore, this low, non-significant correlation can be interpreted as evidence of the success of Mondly and Busuu as comprehensive and adaptive learning tools. Both are able to provide relatively equal opportunities for skill improvement, despite participants' varying initial ability backgrounds. These results reinforce the findings of the t-test analysis, which showed significant improvement,

and support the argument that mobile-based learning is effective in improving Arabic listening skills across a broad spectrum, regardless of participants' initial abilities.



Paired Samples Test				
		t	df	Sig. (2-tailed)
Pair 1	pretest & post-test	-16,812	14	0,000

Figure 3
SPSS Screenshot of Paired Sample Test Results
Listening Skills Data Using Mondly

The results of the paired t-test show a significant difference between the preliminary and final listening skills scores of participants after engaging in learning with the mobile application. The mean difference of 29.333 indicates a substantial improvement after completing the learning activity. This negative value means that the final test score was higher than the preliminary test score, indicating a significant improvement in participants' listening skills. This result is supported by a t-value of 16.812 with degrees of freedom (df) of 14. This large t-value indicates that the improvement in ability is not merely coincidental or random variation, but rather a result of the learning approach provided. Furthermore, the statistical significance level of 0.000 ($p < 0.05$) confirms that the difference between the preliminary and final tests is statistically significant.

Therefore, it can be concluded that learning through Mondly or Busuu applications has a positive effect on improving participants' Arabic listening skills. The 95% confidence interval between 33.076 and 25.591 indicates that the improvement in ability occurred consistently among most participants. This narrow range indicates consistent improvement, so it can be concluded that using mobile apps is effective in improving listening skills overall.

These findings are consistent with several previous studies that have demonstrated the effectiveness of mobile-assisted learning in language teaching. The study by Al-Jarf (2021)

found that using mobile learning apps increases participants' exposure to authentic language input and improves receptive skills, particularly listening skills. The study by Goodwin-Jones (2020) also indicates that language learning apps allow participants to learn independently, flexibly, and repeatedly, which is crucial for improving listening skills.

Furthermore, the research by Kacetl and Klímová supports these findings, showing that mobile learning increases motivation to learn, retention of material, and frequency of exposure to the target language, leading to significant improvements in listening skills. The research by Burston (2015) confirms that the success of mobile-assisted learning depends heavily on the app's ability to provide interactive content and immediate feedback, two features that Mondly and Busuu offer. Both apps offer listening exercises from native speakers, along with automatic correction, progress assessment, and adjustment of material level to suit the user's ability. All these features contributed to the improved final test scores obtained in this study.

Considering the results of the analysis and various previous studies, it can be concluded that learning with mobile applications provides an effective alternative for improving Arabic listening skills. The statistically significant improvement, supported by scientific references, demonstrates that using Mondly and Busuu can provide a more frequent, personalized, and sustainable learning experience. Therefore, mobile-based learning approaches can be recommended as a supplement to, or even a replacement for, traditional listening methods, especially in the context of foreign language learning in today's increasingly digital world.

2. Developing Listening Skills Using Busuu

The results of the descriptive analysis using paired-samples statistics show a significant improvement in listening skills after participants engaged in learning with the mobile application. The pre-learning mean score was 50.60, indicating that

participants' initial skills were still in the low-to-medium range. This suggests that prior to starting the learning, participants were not fully proficient in basic aspects of listening, such as vocabulary and short phrase recognition and understanding simple sentences. The standard deviation of 2.384 indicates that participants' initial abilities were relatively homogeneous with low variance among them, so the group's initial conditions were fairly balanced.

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pretest	50,6	15	2,384	0,616
	post-test	77,13	15	4,438	1,146

Figure 4
 SPSS Screenshot of the Results of Statistical Calculations of Paired Samples of Listening Skills Data Using Busuu

The results of the paired-samples correlation analysis show that the relationship between the preliminary and final test scores is 0.370 with a significance level of 0.175. This correlation coefficient indicates a positive but weak relationship between participants' abilities before and after using the mobile application. This means that participants with better preliminary abilities tend to score higher on the final test, but this relationship is not strong enough and does not apply to all participants.

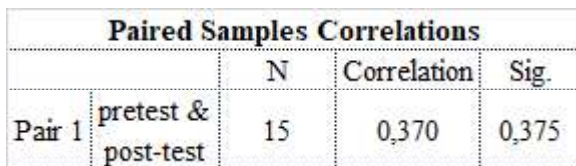
The statistical significance value of 0.175 is greater than the 0.05 threshold, so the relationship is not statistically significant. This means that participants' preliminary abilities are not the primary factor determining their learning outcomes after using the application. The improvement in listening skills observed in the post-test was more influenced by the ability of the Mondly or Busuu applications to provide learning interventions than by the participants' preliminary abilities.

These results are consistent with research on mobile language learning applications (MALL).

Research by Kacetl and Klímová shows that application-based learning provides flexible learning opportunities, allowing participants with lower preliminary abilities to improve as well. Burston (2015) also notes that mobile app features such as material repetition, audio speed settings, and automatic feedback allow participants of varying abilities to have an equal learning experience. Al-Jarf (2021) reached similar conclusions, stating that mobile apps provide effective, authentic audio exposure to improve listening skills among participants of different abilities.

In this study, the low correlation value suggests that the Mondly and Busuu apps can serve as comprehensive learning tools. Participants with low initial scores were able to significantly improve their performance after using the apps, as demonstrated by the results of the paired-samples t-test, which showed a substantial and significant increase in scores. This confirms that the success of listening learning via mobile devices does not always depend on initial ability, but rather on the quality of the exercises, the interactivity of the features, and the frequency of app use.

Therefore, these correlation results indicate that mobile learning can be an effective solution for improving listening skills equally, regardless of participants' initial abilities. These results also reinforce the argument that the use of application-based learning technology should be considered in learning Arabic at various levels of education.



Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	pretest & post-test	15	0,370	0,375

Figure 5
SPSS Screenshot of the Results of Calculating Paired Sample Correlation of Listening Skills Data Using Busuu

The results of the paired-samples correlation analysis show that the relationship between the preliminary and final test scores is 0.370 with a significance level of 0.175. This correlation

coefficient indicates a positive but weak relationship between participants' abilities before and after using the mobile application. This means that participants with better preliminary abilities tend to score higher on the final test, but this relationship is not strong enough and does not apply to all participants.

The statistical significance value of 0.175 is greater than the 0.05 threshold, so the relationship is not statistically significant. This means that participants' preliminary abilities are not the primary factor determining their learning outcomes after using the application. The improvement in listening skills observed in the post-test was more influenced by the ability of the Mondly or Busuu applications to provide learning interventions than by the participants' preliminary abilities.

These results are consistent with research on MALL. Research by Kacetl and Klímová shows that application-based learning provides flexible learning opportunities, allowing participants with lower preliminary abilities to improve as well. Burston (2015) also notes that mobile app features such as material repetition, audio speed settings, and automatic feedback allow participants of varying abilities to have an equal learning experience. Al-Jarf (2021) reached similar conclusions, stating that mobile apps provide effective, authentic audio exposure to improve listening skills among participants of different abilities.

In this study, the low correlation value suggests that the Mondly and Busuu apps can serve as comprehensive learning tools. Participants with low initial scores were able to significantly improve their performance after using the apps, as demonstrated by the results of the paired-samples t-test, which showed a substantial and significant increase in scores. This confirms that the success of listening learning via mobile devices does not always depend on initial ability, but rather on the quality of the exercises, the interactivity of the features, and the frequency of app use.

Therefore, these correlation results indicate that mobile learning can be an effective solution for improving listening skills equally, regardless

of participants' initial abilities. These results also reinforce the argument that the use of application-based learning technology should be considered in learning Arabic at various levels of education.

Paired Samples Test				
		t	df	Sig. (2-tailed)
Pair 1	pretest & post-test	-24,528	14	0,000

Figure 6
 SPSS Screenshot of Paired Sample Test Results Listening Skills Data Using Busuu

The results of the paired-samples t-test show a significant difference between the pre-test and final test scores in participants' auditory comprehension after learning with the mobile app. The mean difference of 26.533 indicates a substantial improvement after learning. The negative sign on the mean difference indicates that the final test score is higher than the pre-test score, thus the change is positive and indicates an improvement in auditory comprehension.

The improvement is further evidenced by the relatively small standard deviation of 4.190, indicating that the skill improvement occurred consistently among most participants. The low mean standard error (1.082) indicates that the estimated mean difference is highly accurate and stable. This is supported by a 95% confidence interval of 28.853 to 24.213, indicating that the improvement in ability actually occurred within this range and was not coincidental. The narrow range also indicates that the learning effect occurred consistently among all participants.

The calculated t-value of 24.528 with degrees of freedom (df = 14) is very high for a t-test, indicating a very strong learning effect. The statistical significance value of 0.000 ($p < 0.05$) indicates that the difference between the preliminary and final test scores is statistically significant. This means that the improvement in listening skills was not accidental but was actually a result of learning using Mondly or Busuu apps. Therefore, these results provide evidence that using mobile apps can significantly improve Arabic

listening skills in a relatively short period.

The results of this study are also consistent with numerous studies on mobile language learning (MALL). Research by Kacetl and Klímová indicates that mobile apps offer a repetitive, flexible, and interactive learning experience, making them highly effective in improving listening skills. Burston confirms that language learning apps can provide exposure to native speakers, which helps to gradually improve oral comprehension. Al-Jarf states that listening exercises using mobile apps improve vocabulary retention and the ability to understand native speakers, especially when participants receive immediate feedback and the opportunity to repeat the material. In addition, Godwin-Jones notes that apps like Mondly and Busuu offer easy-to-understand audio content, interactive exercises, and adaptive features that can be adjusted to the user's abilities. These features allow participants with varying levels of initial ability to demonstrate significant improvement, which is consistent with the non-significant correlation between the preliminary and final tests, indicating that improvement is not dependent on participants' initial abilities.

3. Comparison between Teaching Listening Skills Using Mondly and Busuu

The Shapiro-Wilk normality test results show that all data in both the Mondly and Busuu groups are normally distributed. In the pretest phase, both the Mondly group (sig. = 0.995) and the Busuu group (sig. = 0.669) had statistically significant values significantly greater than 0.05, indicating that the participants' initial listening skills meet the normality assumption (Figure 7). This is important because it ensures that both groups are at a starting point that can be analyzed using parametric statistical techniques without violating the underlying assumptions.

	Classes	Shapiro-Wilk		
		Statistic	df	Sig.
pretest	Mondly	0,986	15	0,995
	Busuu	0,959	15	0,669

post-test	Mondly	0,933	15	0,3
	Busuu	0,938	15	0,358
increase	Mondly	0,956	15	0,617
	Busuu	0,919	15	0,187

Figure 7
 SPSS Screenshot of Calculation Results Comparison between Teaching Listening Skills Using Mondly and Busuu

In the posttest phase, the data for both groups continued to show a normal distribution pattern. The Mondly group obtained a statistical significance value of 0.300 and the Busuu group obtained 0.358, both greater than 0.05. This demonstrates that the distribution of values after treatment remained stable and did not undergo significant distortion despite the increased ability. This consistency indicates that the educational treatment via the mobile application was implemented under controlled conditions and did not produce outliers that could affect data quality. Meanwhile, the normality test results for the learning gains showed that both the Mondly (sig. = 0.617) and Busuu (sig. = 0.187) groups met the criteria for normality. These results support the use of an independent samples t-test to compare the effectiveness of the two applications. Empirically, the test results are consistent with previous MALL studies showing that application-based learning outcome data tend to have a normal distribution due to the repetitive, structured, and relatively standardized nature of the exercises for all participants. Thus, the data in this study have met the main statistical assumptions and can be analyzed more accurately and reliably using a parameter approach.

Pretest		Post-test		Increase	
Based on Mean	Based on Median	Based on Mean	Based on Median	Based on Mean	Based on Median
3,52	3,263	2,781	1,844	5,31	4,304
1	1	1	1	1	1
28	28	28	28	28	28
0,071	0,082	0,107	0,185	0,029	0,047

Figure 8
 SPSS Test of Homogeneity of Variance Screenshot

The results of the homogeneity of variance test (Levin's test) show that in the pretest phase, all Levin's calculation methods whether using the mean, median, median with adjusted degrees of freedom, or cutoff mean obtained significance values greater than 0.05 (sig. = 0.071–0.086). These results indicate that the initial ability variance in both the Mondly and Busuu groups was homogeneous. Therefore, a comparison of the initial abilities of the two groups can be made without concern that different variances will affect the results.

In the posttest, the statistical significance values also remained above the 0.05 threshold (sig. = 0.099–0.185) for all calculation methods. This reinforces the conclusion that the variance in the final abilities of the two groups remains homogeneous. The consistency of homogeneity of variance in the pretest and posttest indicates that the use of different digital learning applications does not cause significant differences in performance between the two groups. However, regarding the improvement index (gain score), Levene's value shows significance less than 0.05 for all calculation methods (sig. = 0.029–0.048). This indicates that the variance in ability improvement between the Mondly and Busuu groups is heterogeneous. In other words, the increase in scores between the groups was not uniform, so any interpretation comparing the effectiveness of the two applications must take this variance into account. This condition also suggests the possibility that each application provided different levels of improvement for the students.

Independent Samples Test			
		Post-test	
		Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F	2,781	
	Sig.	0,107	

t-test for Equality of Means	t	0,998	0,998
	df	28	25,003
	Sig. (2-tailed)	0,327	0,328
	Mean Difference	2	2
	Std. Error Difference	2,004	2,004

Figure 9
 SPSS Test of Homogeneity of Variance Screenshot

The independent samples test results for the post-test scores show that Levene's t-test for equal variances is $F = 2.781$ with a $p = 0.107$, which is greater than 0.05. This indicates that the variances of the two groups the Mondly and Busuu app users—are homogeneous, thus satisfying the assumption of equal variances. With this assumption satisfied, the comparison of the post-test mean scores can be analyzed using the row of assumed equal variances in the t-test table.

This homogeneity condition also indicates that using two different apps does not cause significant disparities in student performance, making the statistical comparison results more stable. In the mean difference test, the t-test for equal means shows $t = 0.998$ with a significance value of $p = 0.327$ (assuming equal variances). This value is well above the significance threshold of 0.05, so it can be concluded that there is no statistically significant difference between the final test scores of the Mondly and Busuu groups. The average difference between the two groups was only 2.000, and the 95% confidence interval covered the range from 2.105 to 6.105, indicating that this difference was not statistically significant enough to be considered meaningful. Thus, experimentally, both applications provided relatively equivalent learning outcomes at the start of the intervention phase. These results suggest that both digital learning platforms are similarly effective in improving mastery of test materials, at least within the context of this study.

DISCUSSION

Considering these results in light of previous research, they are consistent with numerous comparative studies of language learning

applications, which show that differences between platforms rarely cause significant differences in final outcomes but are more related to aspects of the learning experience or motivation (Benlaghrissi & Ouahidi, 2025). For example, a study by Loewen et al. (2020) indicated that exercise-based applications such as Duolingo, Babbel, and Busuu tend to achieve similar improvements in vocabulary mastery, despite each having different features. Furthermore, Godwin-Jones research also shows that mobile learning technology generally produces positive and consistent learning outcomes, unless differences in platform features are directly related to specific teaching strategies. Thus, the similarity of post-test results between Mondly and Busuu in this study reinforces the academic view that the effectiveness of language learning applications is influenced more by the degree of use and student engagement than by the type of platform.

Moreover, the consistency of this study's findings with previous results demonstrates that the innovation of digital learning does not always depend on the choice of a particular application, but rather on how the application is integrated into the learning design and combined with appropriate teaching strategies. This is supported by research by Stockwell & Hubbard (2013), which indicates that the success of mobile-based learning applications increases if users are provided with clear instructions, structured objectives, and adequate instructional support. Therefore, despite Mondly and Busuu differing in their interfaces, exercise methods, and feedback formats, the results of this study confirm that both applications are still capable of achieving similar academic outcomes, provided they are implemented under the same learning conditions.

CONCLUSION

The study results indicate that using mobile learning applications, specifically Mondly and Busuu, has a significant and positive impact on improving students' listening skills. This is



evident from the substantial difference in mean scores on the preliminary and final tests between the two groups, as well as the statistical significance, demonstrating that this improvement was not accidental. Using these applications provides participants with access to authentic audio materials, repetitive exercises, and immediate feedback, fostering deeper oral comprehension than traditional methods.

Furthermore, the relationship between preliminary and final test scores shows that participants' initial abilities did not significantly influence their final results. This means that participants with both low and high initial abilities benefited from using the applications. This demonstrates the inclusive nature of mobile learning and its ability to adapt to individual needs. These findings are consistent with previous studies indicating that language learning applications can reduce ability differences among participants.

Although both groups showed significant improvement, the results of the independent t-test did not reveal any significant difference between Mondly and Busuu test scores. These two applications proved equally effective in learning, despite their different features, interaction models, and teaching methods. These results support the view that the success of mobile learning is determined more by the level of use, consistency of practice, and good learning design than by the type of application.

Therefore, this study confirms that Mondly and Busuu are suitable educational tools in the context of learning Arabic, particularly for improving listening skills. Using mobile applications can be an alternative and complementary option to traditional learning methods, especially for students who need flexibility, diverse materials, and opportunities for independent learning. Further research is recommended to explore the emotional and motivational aspects and conduct a more in-depth analysis of the application features to provide a comprehensive picture of the most effective mobile learning strategies.

REFERENCES

- Abdulrahman, A. (2025). *Insights Into How Digital Tools and Platforms Facilitate Foreign Language Learning and Reflections on Ethical Issues*. 16(2), 415–424. <https://doi.org/10.17507/jltr.1602.07>
- Alsaiari, H. E. (2025). The Efficacy of Digital Stories in Enhancing Listening Skills within the Context of an Arabic Language Course for Sixth-Grade Students in Dumat Al-Jandal in Saudi Arabia. *International Journal of Learning, Teaching and Educational Research*, 24(9), 40–60. <https://doi.org/10.26803/ijlter.24.9.3>
- Asty, N. A., Sawaluddin, Sabilla, D., & Nasution, S. (2025). Analisis Penerapan Metode Berbasis Tugas dalam Meningkatkan Kompetensi Berbahasa Asing di Sekolah Menengah. *PERSPEKTIF LINGUISTIK*. 4(2), 2893–2911.
- Babin, C., Jamard, R., & Sarango-Lapo, C. P. (2023). Students' Acceptance and Efficiency of Virtual Reality in French Language Learning at Higher Education. In *Lecture Notes in Educational Technology* (662–670). https://doi.org/10.1007/978-981-99-0942-1_69
- Baharun, S., Hamzah, A. F., & Abidin, Z. (2024). *Penggunaan Film Anime Untuk Meningkatkan Keterampilan Mendengar dan Berbicara Bahasa Arab di Madrasah Aliyah Darul Uluhah Wa Da'wah Bangil, Pasuruan*. 02(01), 1–17.
- Benlaghrissi, H., & Ouahidi, L. M. (2025). Emerging Mobile Apps for Enhancing L2 Listening: A Case Study of Moroccan Students. *Communications in Computer and Information Science*, 2255 CCIS, 422–434. https://doi.org/10.1007/978-3-031-93448-3_34
- Cheng, H. F. (2004). A Comparison of Multiple-Choice-and Open-Ended Response Formats for the Assessment of Listening Proficiency in English. *Foreign*

- Language Annals*, 37(4), 544–553.
<https://doi.org/10.1111/j.1944-9720.2004.tb02421.x>
- Gajda, K. (2024). Integration of Language Learning Mobile Application in University Language Program. *International Conferences E-Society 2024 and Mobile Learning 2024*, 394–396. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85203607066&partnerID=40&md5=fb9685b78a49144b1d182c14b249cff6>
- Hijriyah, U., Edi, R. N., Aridan, M., Hashim, H. U., & Kesuma, G. C. (2025). How Effective Is SUNO.AI in Enhancing Arabic Listening Skills? An Evaluation of AI-Based Personalized Learning. *International Journal of Information and Education Technology*, 15(2), 391–407. <https://doi.org/10.18178/ijiet.2025.15.2.2251>
- Huda, K. (2017). Pemanfaatan Website (BUSUU.COM) sebagai Multimedia Interaktif dalam Pembelajaran Bahasa. *An Nabighoh*, 19(02), 286–301.
- Imam, M., Nasution, S., Al, I., & Firdaus, H. D. (2025). Analisis Efektivitas Duolingo dan Mondly dalam Pembelajaran Bahasa Arab: Studi Eksperimen di Kalangan Pemula Analysis of the Effectiveness of Duolingo and Mondly in Arabic Language Learning: *An Experimental Study Among Beginners*. 12307–12320.
- Mendoza, V., Vera-de la Torre, A., & Páez-Quinde, C. (2020). Mobile apps (English listening and 6 minutes English) and the listening skill. *Advances in Intelligent Systems and Computing*, 1134 AISC, 60–66. https://doi.org/10.1007/978-3-030-40274-7_6
- Najjar, S., & Oktasari, H. (2023). Embracing Mobile Learning In Education: Membuka Keuntungan, Menghadapi Tantangan, dan Menjelajahi Prospek Masa Depan. *Prosiding Seminar Nasional Kemahasiswaan*, 1(1), 74–83. <https://doi.org/10.56983/prosidingkemahasiswaan.v1i1.1458>
- Park, C., Wang, M., & Hwang, W. (2020). A study on robustness of the paired sample tests. *Industrial Engineering and Management Systems*, 19(2), 386–397. <https://doi.org/10.7232/IEMS.2020.19.2.386>
- Syafei, I. (2019). Model Pembelajaran Bahasa Arab Berbasis Konstruktivisme di Perguruan Tinggi Islam. *Jurnal Pendidikan Islam UIN Sunan Gunung Djati (JPI)*, 27(3):463-474, DOI:10.15575/jpi.v27i3.530
- Tai, T., & Chen, H. H.-J. (2021). The Impact of Immersive Virtual Reality on EFL Learners' Listening Comprehension. *Journal of Educational Computing Research*, 59(7), 1272–1293. <https://doi.org/10.1177/0735633121994291>
- Taqwim, T. (2025). Transformasi Media: Terobosan Digital dalam Pembelajaran Bahasa dan Sastra Indonesia. *Penamuda Media*, 1(4), xii + 173. Retrieved from <https://penamudamedia.com/index.php/publisher/article/view/158>
- Thilagam, P. S., Sahidul Islam, M. D., Tamilarasan, P., Vijayakumar, S., Hameed, N. S., & Infant Raj, I. (2025). Mobile Applications for Self-Assessment in English Language Learning: Enhancing Learner Autonomy and Reflection. *Proceedings of 2025 3rd International Conference on Intelligent Systems, Advanced Computing, and Communication, ISACC 2025*, 422–426. <https://doi.org/10.1109/ISACC65211.2025.10969327>