

Optimizing Wordwall Media in Arabic Language Learning: An Experimental Study on Mastery of Ismiyyah and Fi'liyah Sentences

Alfina¹, Subhan², Ubaidillah³

^{1,2,3}Arabic Language Education, Sultan Maulana Hasanuddin State Islamic University of Banten, Indonesia

alfnaa1012@gmail.com

*corresponding author

Article History:

Received:
27 November 2025

Revised:
15 December 2025

Accepted:
26 December 2025

Available online:
28 January 2026

Keywords:

Wordwall, Arabic Sentence Structure, Interactive Learning, Nahwu, Digital Media.

Abstract:

Wordwall affected students' mastery of Arabic sentence structure at MTs Negeri 2 Kota Serang, particularly in terms of the number of ismiyyah and fi'liyah. This study not only measured the effect of Wordwall but also examined how to optimize its use by integrating appropriate game types and feedback features to enhance students' mastery of ismiyyah and fi'liyah sentence structures. Traditional teaching methods and the lack of interactive digital media resulted in low syntactic ability among students, which motivated this study. Wordwall, a game-based learning platform, is considered to be able to increase student engagement and understanding through visual and audio activities and instant feedback. A quantitative method with a One Group Pretest-Posttest quasi-experimental design was used in this study. The research sample consisted of 32 students in class VIII D. The tools used included learning outcome tests and perception questionnaires, which had been tested for validity and reliability using the SPSS program. The results showed a significant increase in the mastery of Arabic sentence structure, with an average pretest score of 53.66 and a posttest score of 93.25, and a paired sample t-test showed a significance value of $p = 0.000$. On the other hand, Cohen's effect size of 3.66 indicated a very large practical effect. The high survey results show that students' perceptions of the use of Wordwall are also positive. Based on the research that has been conducted, Wordwall can be used as a digital learning tool in madrasahs and has a significant impact on students' mastery of Arabic sentence structure.

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Introduction

The growth of information and communication technology (ICT) during the Fourth Industrial Revolution has significantly changed modern education¹. New digital learning tools are now essential in making the learning process more interactive, team-based, and student-centered². Teachers no longer just impart information; they help guide students and use technology to encourage them to think more deeply and creatively. The use of digital media in education also

¹ Intan Amalia, "Using Information and Communication Technology (ICT) in the Learning Process at School" 2, no. 2 (2020).

² Lina Fina et al., "Utilizing Interactive Wordwall-Based Educational Tools for Arabic Language Learning," n.d., 1–10.

helps students feel more interested and enthusiastic about learning, which can improve their learning outcomes³.

One of the basic components in studying nahwu is understanding the structure of the Arabic language⁴. Arabic sentences are generally divided into two main categories: isimiyah and fi'liyah. Fi'liyah sentences begin with *fi'il* and usually contain *fi'il*, *fā'il*, and other supporting components such as *maj'ūl bib*, while isimiyah sentences begin with *isim* and consist of the elements *mubtada'* and *khabar*⁵. Understanding and constructing Arabic sentences correctly requires mastery of isimiyah and fi'liyah sentences. Errors in identifying these syntactic components can lead to errors in sentence structure and meaning. Therefore, learning Arabic sentence structure requires methods and media that enable students to understand the relationships between sentence components in a systematic and useful manner⁶.

However, at the Madrasah Tsanawiyah (MTs) level, particularly in Arabic language learning, various obstacles are still encountered. Based on initial observations at MTs Negeri 2 Kota Serang, some students are still unable to produce correct isimiyah and fi'liyah sentences. Students make mistakes in identifying basic syntactic components, such as *mubtada'*, *khabar*, *fi'il*, *fā'il*, and *maj'ūl bib*, both during the learning process and in assessments. This situation shows an imbalance between the expected level of proficiency in sentence structure and the actual abilities of students in this subject. One of the contributing factors to this situation is that, to date, learning is still dominated by conventional and teacher-centered methods, with little use of learning media, which hinders the development of active student participation and optimal understanding of nahwu concepts.

Previous studies have shown that game-based digital learning media, such as Wordwall, have been widely used in Arabic language teaching and have increased student motivation, engagement, and involvement⁷. In addition, several studies have shown that Wordwall can improve

³ Siti Nurbaiti Nasabiyah et al., "The Role of Information and Communication Technology (ICT) in the Learning Process at MA Miftahul Ulum Kedungpanji to Better Understand Lesson Material, as well as Prepare Them to Face ICT in the Learning Process at MA Miftahul Ulum Kedungpanji and Provide" 3, no. 3 (2024).

⁴ Neneng Roiyatul Muawanah et al., "Fa'aliya Tu Thariqah Make a Match Fi Tarqiyati Maharati Al- Qira'ah Bi Al - Lughah Al- 'Arabiyyah: Tahlil Nataij at - Ta'Allum The Effectiveness of the Make a Match Method in Improving Arabic Reading Skills: An Analysis of Learning Outcomes" 11, no. 2 (2025): 548–560; Ubaidillah, "Pembelajaran Maharah Istima' Berbasis Online : Blended Learning Dalam Istima'," *Al-Ittihad* 12, no. 1 (2020): 45–54; Ubaidillah Ubaidillah et al., "The Importance of Digital Media in Arabic Language Learning; The Use of Canva in Vocabulary Learning," *Jurnal Al-Maqayis* 10, no. 1 (2023): 36–52.

⁵ Abū Bishr 'Amr ibn 'Uthmān ibn Qanbar Al-Baṣrī, "Kitāb Sibawaih," 1988; Mahir Arriyadi and Lailatul Mathoriyah, "Analisis Kesalahan Sintaksis Dalam Membaca Teks Arab Pada Siswa Serta Alternatif Peningkatan Kualitas Pembelajaran Bahasa Arab Di Sekolah" 7, no. 2 (2024).

⁶ Fina et al., "Pemanfaatan Alat Peraga Edukatif Berbasis Wordwall Interaktif Untuk Pembelajaran Bahasa Arab"; Bilqis Arifah et al., "Bahasa , Pendidikan , Dan Agama Dalam Pembelajaran" 6, no. 1 (2025): 38–54.

⁷ Syafi'i Via Nuril Qamariyah, "Eektivitas Media Wordwall Dalam Meningkatkan Hasil Belajar Bahasa Arab Siswa Kelas X Man 1 Lamongan" 7 (2025): 62–79.

students' vocabulary mastery, encourage students to participate in learning activities, and make classes more cooperative and enjoyable by using interactive activities and instant feedback⁸.

However, most previous studies have focused on lexical and affective elements, such as improving students' vocabulary, their interest, and their desire to learn⁹. Very few studies have examined the influence of digital media on the mastery of Arabic sentence structure (syntactic elements), especially ismiyyah and fi'liyah sentences¹⁰. In addition, experimental studies investigating the use of game-based digital media to improve students' syntactic abilities are still rare in Madrasah Tsanawiyah (MTs), especially in MTs Negeri 2 Kota Serang.

The uniqueness of this study lies in its focus on optimizing the use of Wordwall to improve mastery of Arabic sentence structure, particularly ismiyyah and fi'liyah sentences. This study uses an experimental approach to measure the impact of Wordwall on students' syntactic comprehension. It also investigates methods for optimizing digital media so that nahwu learning can be more interactive, effective, and student-centered.

This study not only examines the effects of Wordwall, but also how to maximize its use in Arabic grammar learning. This is done by combining appropriate Wordwall features, such as matching pairs, quizzes, and fill-in-the-blank exercises, with nahwu material related to ismiyyah and fi'liyah sentences. In this way, Wordwall is not only used as a digital tool, but is also designed with the aim of improving students' syntactic understanding and engagement.

Based on the background and research gaps above, the research questions in this study are as follows: First, does the use of Wordwall media affect the mastery of Arabic sentence structure among students at MTs Negeri 2 Kota Serang? Second, to what extent does the use of Wordwall media in Arabic language learning improve students' syntactic abilities?

Therefore, this study aims to determine the effect of using Wordwall media on the mastery of Arabic sentence structure among students at MTs Negeri 2 Kota Serang. This study also aims

⁸ Rizqi Faridah Majid and Dudung Hamdun, "Pembelajaran Mufradat Melalui Media Wordwall Dalam Meningkatkan Minat Belajar Bahasa Arab Di MTsN 2 Magetan," *Mabira: Journal of Arabic Studies & Teaching* 2, no. 2 (2025): 1–10; Masliha Alfiatul Aqliyah et al., "Exploring The Role Of Wordwall As A Learning Media For Teaching Procedural Texts To Ninth-Grade Students," *International Symposium on Global Education, Psychology, and Cultural Sinergi* (2024): 1–5; Maryam Nurchasanah and Ari Khairurrijal Fahmi, "Pengaruh Wordwall Dalam Meningkatkan Minat Belajar Kosakata Bahasa Arab Pada Siswa Kelas VIII Di MTs Al-Muddatsiriyah Jakarta," *Al-Fusha: Arabic Language Education Journal* 6, no. 1 (2024): 37–43; Fitri Charismaullah Az-Zahro et al., "Optimalisasi WordWall Bermuatan Fi'il Mudhori' Untuk Meningkatkan Pemahaman Siswa Terhadap Fi'il Mudhori'," *JlIP - Jurnal Ilmiah Ilmu Pendidikan* 8, no. 6 (2025): 5689–5695; Dian Kusuma Wardani et al., "Efektifitas Pembelajaran Bahasa Arab Dengan Wordwall Dalam Meningkatkan Antusiasme Dan Pemahaman Siswa MA Al-Bairuny," *El-Syaker: Samarinda International Journal of Language Studies* 2, no. 1 (2025): 65–72.

⁹ Rima Ajeng Rahmawati and Hamdal Zakaria, "Analisis Penerapan Media Wordwall Pada Pembelajaran Bahasa Arab Di Smpit Insan Mulia" 4, no. 2 (2024): 87–99; Aqliyah et al., "Exploring The Role Of Wordwall As A Learning Media For Teaching Procedural Texts To Ninth-Grade Students."

¹⁰ Tatsa Galuh Pradani, "Penggunaan Media Pembelajaran Wordwall Untuk Meningkatkan Minat Dan Motivasi Belajar Siswa Pada Pembelajaran IPA Di Sekolah Dasar" 1, no. 5 (2022): 452–457; Awaludin Abdul Ghaffar Badriati Zahroun Nabila, Fachrur Razi Amir, "Penguasaan Jumlah Ismiyah Dan Jumlah Fi'liyah Terhadap Kemahiran Menyusun Paragraf Bahasa Arab Siswa" (2020), <https://ojs.unida.ac.id/tatsqifiy/issue/view/320>.

to measure the extent of students' nahwu abilities after using Wordwall media in Arabic language learning, as well as to hear students' opinions about the use of this digital media. Hopefully, this study can help in developing better teaching tools that utilize technology and provide useful ideas for teachers to make Arabic lessons more creative, effective, and enjoyable.

Method

This study uses a quantitative approach with a quasi-experimental One Group Pretest–Posttest Design¹¹. This methodology was chosen because, although there is no control group for comparison, this method allows researchers to assess the impact of Wordwall on students' mastery of Arabic sentence structure. The use of Wordwall media served as the independent variable in this study, while mastery of Arabic sentence structure, which includes the ability to understand, recognize, and produce ismiyyah and fi'liyah accurately, served as the dependent variable.

All eighth-grade students at MTs Negeri 2 Kota Serang in the 2025–2026 academic year were included in this study. Class VIII D, consisting of 32 students, was selected through purposive sampling because its curriculum was in line with the research objectives. Students' syntactic abilities were evaluated using a learning outcome test consisting of 25 questions, including five short essay questions and 20 multiple-choice questions. In addition, the students' behavior, engagement, and reactions during Wordwall-based learning activities were monitored using observation sheets. An important stage in this study was ensuring the quality of the measuring instruments through validity and reliability testing. Validity testing ensures that each item truly measures the intended aspect of sentence structure, while reliability testing ensures that the measurement tool provides consistent and stable results. The instruments used were tested for content validity by Arabic language experts and for reliability using the SPSS program¹², and the results showed that the instruments were suitable for use. During the treatment session, optimization was carried out by selecting the type of Wordwall game that was appropriate for the syntactic objectives and gradually increasing the level of difficulty to improve students' mastery of ismiyyah and fi'liyah sentence structures. The optimization process also involved adjusting the sequence of activities from recognition to production tasks and providing instant feedback through Wordwall to ensure gradual mastery of syntactic concepts.

Data collection was conducted in two stages: an initial test before treatment and a final test after using Wordwall for four sessions. Wordwall was used in interactive exercises such as quizzes,

¹¹ J. W. Creswell, *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*. Boston: Pearson, 2012; Sugiyono, *Quantitative, Qualitative, Research Methods*. Bogor: Ghalia Indonesia, 2014; S. Arikunto, *Research Procedures: A Practical Approach*. Jakarta: Rineka Cipta, 2018.

¹² Imam Ghozali, *Multivariate Analysis Application with IBM SPSS 25 Program*, 2018; Singgih Santoso, *Mastering Statistics in the Information Age with SPSS 12*, 2005.

matching pairs, and opening boxes to help students gradually understand sentence structure. To describe student learning outcomes, descriptive statistics were used to analyze the data obtained, and a paired sample t-test was used to identify significant differences between the pre-test and post-test scores. In addition, Cohen's d effect size for Wordwall was calculated to assess the extent to which Wordwall helped students understand Arabic sentence structure.

Result and Discussion

To ensure the suitability and consistency of the measurement instruments used, validity and reliability tests were conducted on the pretest and posttest instruments before the learning outcome data were analyzed further. The empirical validity of all items was proven by the test results, which showed that the total correlation of each item was higher than r-table (0.349). The instrument was considered appropriate and consistent for use in this study because the Cronbach's Alpha value of 0.992 indicated very high reliability.

A descriptive analysis was conducted on the pretest and posttest results to show the improvement in student learning outcomes after using Wordwall in the learning process. After conducting the pretest and posttest tests on SPSS, the results showed a significant increase between the pretest and posttest results. The average (mean) student score increased from 53.66 to 93.25, indicating the positive impact of Wordwall media on students' ability to understand Arabic sentence structure (ismiyah and f'liyah).

Then, a normality test was conducted on the pretest and posttest data to verify the suitability of using parametric tests. The Kolmogorov–Smirnov and Shapiro–Wilk tests on the normality data of the pretest and posttest produced a significance value greater than 0.05, indicating that the data was normally distributed and met the requirements for parametric analysis.

Based on the normality test results, the pretest data (Sig. = 0.098 on Kolmogorov–Smirnov and 0.208 on Shapiro–Wilk) and posttest data (Sig. = 0.053 and 0.055) both have significance values greater than 0.05, indicating that both are normally distributed and meet the requirements for parametric analysis.

A paired t-test was then conducted, which showed a very significant difference between the students' pretest and posttest scores. The mean difference of -39.594 indicates that the posttest scores were much higher than the pretest scores. The 95% confidence interval ranged from -43.497 to -35.690 and did not include zero, confirming the consistency of this difference. The t-value of -20.687, with 31 degrees of freedom and a significance level of 0.000 ($p < 0.001$), confirms that this increase is statistically significant. Therefore, it can be concluded that teaching interventions, particularly the use of Wordwall as a learning medium, have a significant effect on students' mastery of Arabic sentence structure.

Cohen's *d* value of 3.66 indicates a very large effect size. This means that the increase in scores from the pre-test to the post-test is not only statistically significant but also has a large impact in practice. This high effect size indicates that the use of Wordwall as a learning medium has a significant positive effect on students' abilities, making this strategy effective and recommended for use in Arabic language learning.

The research tool, in the form of a questionnaire about student perceptions, was analyzed using validity tests, reliability tests, and descriptive statistics. The validity test was conducted to assess the suitability of each statement in measuring the research variables, while the reliability test was conducted to ensure the internal consistency of the tool. In addition, descriptive analysis was used to identify trends in student responses to each item in the questionnaire. The following is a Likert scale:

Table 1. Likert Scale Research Questionnaire

No.	Description	Value
1.	Strongly disagree	1
2.	Disagree	2
3.	Undecided	3
4.	Agree	4
5.	Strongly agree	5

The results of the study indicate that students at MTs Negeri 2 Kota Serang gained a better understanding of Arabic phrase structure through the use of Wordwall. The improvement in students' abilities before and after treatment shows that this digital media plays a major role in strengthening their mastery of syntactic elements, particularly in recognizing and forming ismiyyah and fi'liyah sentences.

Richard Mayer's Multimedia Learning Theory explains the effectiveness of Wordwall in syntax learning. This theory claims that combining verbal and visual elements can improve information processing efficiency. Wordwall allows students to interact visually and cognitively at the same time by combining text, colors, images, and interactive feedback. Students' understanding of the functions of Arabic sentence elements such as *mubtada'*, *khobar*, *fi'l*, and *fa'il* is improved through this dual processing¹³.

In addition, understanding of the impact of Wordwall is reinforced by Jerome Bruner's theory of representation (enactive, iconic, and symbolic). Students move from the concrete action stage (enactive) to visual representation (iconic), and then to abstract understanding (symbolic)

¹³ Richard E. Mayer, "Multimedia Learning," *Psychology of Learning and Motivation - Advances in Research and Theory* 41 (2009): 85–139.

through interactive features such as drag-and-drop activities, matching exercises, and quizzes. Over time, this process helps students understand complex grammar rules naturally and meaningfully¹⁴.

From a learning motivation perspective, Wordwall also incorporates elements of autonomy, competence, and engagement. This aligns with self-determination theory. Students can choose answers independently, receive immediate feedback, and feel a sense of accomplishment through the challenges and scores they achieve. This increases intrinsic motivation and maintains focus on learning, two important components in mastering complex grammatical structures¹⁵.

Wordwall transforms Nahwu learning into an interactive, student-centered experience compared to conventional teacher-centered learning¹⁶. By using game-based activities, students actively participate in discovering patterns and creating expressions, rather than simply memorizing rules¹⁷. Using this method not only makes it easier to learn grammar, but also improves mastery and standards of syntactic concepts¹⁸.

This is new research showing that Wordwall as previous studies have shown works well for acquiring vocabulary and improving syntactic abilities. Due to the flexibility of this medium, teachers can create easily customizable Nahwu exercises, such as recognizing sentence patterns or constructing fi'liyah elements. These exercises are directly aimed at mastering ismiyyah and fi'liyah structures¹⁹.

In addition, Wordwall has been well received as a digital learning medium that is relevant to the characteristics of the modern generation, as evidenced by positive responses from students and high reliability scores on perception questionnaires. This medium bridges abstract linguistic theory with practical classroom applications, making nahwu learning easier, more interesting, and more effective.

Overall, Wordwall has proven successful in teaching Arabic syntax due to its combination of interactive engagement, visual support, motivational reinforcement, and cognitive processing. With this assistance, grammar learning transforms from a memory-dependent activity into an enjoyable and challenging activity to learn. It also encourages a deeper and more sustainable understanding of Arabic language structure.

¹⁴ Jerome S Bruner, *Toward a Theory of Instruction* (Cambridge, MA: Harvard University Press, 1966).

¹⁵ Richard M. Ryan and Edward L. Deci, "Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being," *Routledge Handbook of Adapted Physical Education* 55, no. 1 (1985): 296–312.

¹⁶ Indah Rahmayanti and Munirul Abidin, "Efektivitas Penggunaan Wordwall Sebagai Media i IEvaluasi I" 6, no. 2 (2023): 349–358.

¹⁷ Aqliyah et al., "Exploring The Role Of Wordwall As A Learning Media For Teaching Procedural Texts To Ninth-Grade Students."

¹⁸ Sekar Ayu Wulandari et al., "Penerapan Metode Game Based Learning Dalam Materi Sejarah Bandung Lautan Api Di Kelas XI" 2, no. 1 (2024): 34–41.

¹⁹ Rima Suryani, "Persepsi Siswa Terhadap Pembelajaran Setelah Menggunakan Wordwall Di SMPN 4 Sindangkerta" 2, no. 1 (2024): 2–4.

Aligning game types with specific syntactic objectives enables optimization of Wordwall in this study. The ability to recognize *mubtada* ' and *khobar* is enhanced through activities such as Matching Pairs. In addition, interactive activities such as Quizzes and Open Boxes help students construct *fi'liyah* sentences. Wordwall is designed to improve understanding and ability to use Arabic sentence structures by combining these activities with immediate feedback and gradually increasing the level of difficulty.

Thus, the findings of this study confirm that Wordwall is not only statistically effective but also has a strong theoretical and pedagogical basis for Arabic language learning. By using this medium, we can connect contemporary learning theories with more innovative approaches to Arabic language learning. By optimizing its features, teachers can create contextual, engaging, and challenging learning experiences. This helps students understand and apply syntactic concepts such as *ismiyyah* and *fi'liyah* in real communication. Based on these results, there is a new path for the creation of technology-based *nahwu* learning strategies. These strategies will be more relevant and adaptable to the needs of students in the 21st century.

Conclusion

It can be concluded that the use of Wordwall has a positive and significant impact on improving students' understanding of Arabic sentence structure at MTs Negeri 2 Kota Serang. This medium has been proven to facilitate students' understanding of lesson material on *ismiyyah* and *fi'liyah* numbers in a more engaging way through interactive learning exercises that encourage involvement and motivation to learn. This improvement was achieved through optimization of Wordwall features specifically designed to meet syntactic learning objectives. This shows that appropriate instruction can increase the effectiveness of media such as this. Wordwall not only improves learning outcomes but also encourages students' positive attitudes towards Arabic language learning and creates a pleasant learning environment.

Wordwall is recommended as an effective medium for delivering *nahwu* material in a digital learning environment at the madrasah level. Teachers can utilize its features to design interesting and flexible syntactic exercises according to the students' skill levels. Regarding educational implications, this study highlights the need to apply interactive technology in Arabic language teaching to improve understanding of complex grammatical concepts. To optimally implement technology-based learning, educational institutions, especially madrasahs, should provide training to teachers in the use of digital media and provide adequate ICT infrastructure.

However, this study has several limitations, such as the sample consisting of only one class in one madrasah and the relatively short treatment period. Therefore, further research is recommended to involve a larger sample from various levels of madrasah, compare Wordwall with

digital platforms such as Quizizz or Kahoot, and examine how Wordwall affects students' syntactic retention and transfer of skills in the long term.

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