



The Effectiveness of Non-Digital Interactive Spinning Wheel Media in Improving Arabic Learning Outcomes at Madrasah Aliyah

فاعلية وسيلة عجلة الدوران غير الرقمية في تحسين نتائج تعلم اللغة العربية لدى طلاب المدرسة الثانوية الإسلامية

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ABSTRACT

Although previous studies have examined the use of spinning wheel media and digital instructional media in language learning, limited research has investigated the effectiveness of non-digital interactive spinning wheel media in Arabic language learning at the Madrasah Aliyah level, particularly in schools with limited technological facilities. This study aimed to examine the effectiveness of non-digital interactive spinning wheel media in improving students' Arabic learning outcomes at Madrasah Aliyah As'ad Jambi. The study employed a quantitative approach using a quasi-experimental non-equivalent control group design. The participants consisted of 66 students divided into an experimental group and a control group. Data were collected through pre-tests and post-tests and analyzed using the Mann-Whitney U test with SPSS software. The results revealed a significant difference between the learning outcomes of students in the experimental and control groups after the treatment ($U = 274.00$, $Z = -3.54$, $p < .001$). Students in the experimental group achieved higher learning outcomes than those in the control group. These findings indicate that non-digital interactive spinning wheel media can effectively support Arabic language learning and improve students' learning outcomes. This study contributes to the development of interactive and game-based Arabic language learning by demonstrating that effective instructional innovation can be implemented without relying on digital technology, particularly in educational settings with limited technological resources.

Keywords: Non-digital spinning wheel media, Arabic learning, learning outcomes, interactive instructional media, quasi-experimental

مستخلص البحث

على الرغم من أن الدراسات السابقة تناولت استخدام وسيلة عجلة الدوران والوسائط التعليمية الرقمية في تعلم اللغات، فإن البحوث المتعلقة بفعالية وسيلة عجلة الدوران التفاعلية غير الرقمية في تعليم اللغة العربية على مستوى المدرسة الثانوية الإسلامية (المدرسة العالية) ما تزال محدودة، ولا سيما في البيئات التعليمية ذات الإمكانيات التكنولوجية المحدودة. هدفت هذه الدراسة إلى الكشف عن فعالية وسيلة عجلة الدوران التفاعلية غير الرقمية في تحسين نتائج تعلم اللغة العربية لدى طلاب مدرسة أسعد الثانوية الإسلامية في جامبي. واعتمدت الدراسة المنهج الكمي باستخدام التصميم شبه التجريبي من نوع المجموعة الضابطة غير المتكافئة. وتكونت عينة الدراسة من 66 طالبًا وطالبة قُسموا إلى مجموعة تجريبية ومجموعة ضابطة. جُمعت البيانات من خلال الاختبار القبلي والاختبار البعدي، ثم حُللت باستخدام اختبار مان-ويتني (U -Mann Whitney) بواسطة برنامج SPSS. وأظهرت النتائج وجود فرق دال إحصائيًا بين نتائج تعلم الطلاب في المجموعتين بعد تطبيق المعالجة التجريبية ($p < .001$, $Z = -3.54$, $U = 274.00$). كما حقق طلاب المجموعة التجريبية نتائج تعلم أعلى مقارنة بطلاب المجموعة الضابطة. وتشير هذه النتائج إلى أن وسيلة عجلة الدوران التفاعلية غير الرقمية يمكن أن تسهم بفعالية في دعم تعلم اللغة العربية وتحسين نتائج التعلم. وتسهم هذه الدراسة في تطوير التعلم التفاعلي القائم على الألعاب في تعليم اللغة العربية من خلال إظهار إمكانية تطبيق الابتكار التعليمي الفعال دون الاعتماد على التكنولوجيا الرقمية، خاصة في البيئات التعليمية ذات الموارد التكنولوجية المحدودة.

الكلمات المفتاحية: عجلة الغزل التفاعلية، مخرجات تعلم اللغة العربية، المنهج الشبه التجريبي، المدرسة العالية الأسعد بجامبي.

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INTRODUCTION

Language also functions as a means of education and learning, as well as a medium for preserving cultural heritage. One of the functions of language that attracts researchers' attention is its role as a means of expression. When individuals speak, they use words and sentences to express ideas, feelings, and the problems they encounter. This expressive function is clearly reflected in literature and written works, where writers attempt to influence readers through language (Jauharoh et al., 2021). Arabic is an important language to learn in daily life because it serves as a means of communication in both conversation and speech. Arabic is also particularly interesting to study because it is not merely a language of communication, but also the language of divine revelation for Muslims. Two primary sources of Islamic life, namely the Qur'an and Hadith, are written in Arabic. (Suja, 2019).

In Arabic language learning, there are four primary skills that serve as the main focus: listening skills (*maharah al-istima'*), speaking skills (*maharah al-kalam*), reading skills (*maharah al-qira'ah*), and writing skills (*maharah al-kitabah*) (Aziimah & Ammar, n.d.). These four skills need to be developed in an integrated manner through effective and meaningful learning processes in order to achieve the objectives of Arabic language learning optimally.

Arabic language learning plays an important role in Islamic education because it serves as a medium for understanding Islamic sources and developing students' linguistic competence. However, despite its importance, Arabic language learning in many madrasahs continues to face various challenges, particularly low learning outcomes and limited student engagement during the learning process. Based on preliminary observations conducted in Grade XI at Madrasah Aliyah As'ad Jambi, many students' learning outcomes were still below the Minimum Mastery Criteria (KKM). One contributing factor was the limited use of engaging instructional media that could facilitate students' understanding of learning materials and encourage active participation. In addition, limited technological facilities constrained the implementation of digital-based instructional media, creating a need for alternative learning media that are simple, affordable, and easy to implement.

Instructional media have long been recognized as important components in enhancing the effectiveness of learning. Instructional media can help teachers present learning materials more clearly, attract students' attention, stimulate learning motivation, and improve learning outcomes (Pito, 2018; Wati & Muhsin, 2019). The

urgency of using instructional media lies in its ability to create a conducive learning environment that supports students' engagement and participation during classroom activities (Bahar & Risnawati, 2019). In language learning contexts, instructional media and teaching methods play a crucial role in determining the effectiveness of the learning process (Richards & Rodgers, 2014). In language learning contexts, instructional media can facilitate deeper understanding of learning materials and create more interactive learning experiences (Rahmawati, 2023).

In addition to instructional media, teaching strategies also play an important role in determining the effectiveness of language learning. Learning strategies that emphasize interaction and student engagement have been shown to contribute positively to the development of Arabic language skills and learning achievement (Maghfiroh et al., 2025). According to (Toto Edidarmo et al., 2025a), students' motivation in learning Arabic is strongly influenced by the instructional strategies implemented by teachers during the learning process. Therefore, teachers are expected not only to deliver learning materials but also to create enjoyable, interactive, and challenging learning environments that encourage students' active participation.

The success of Arabic language learning is greatly influenced by the selection of instructional approaches and media that are appropriate to students' characteristics (Suryadarma et al., 2025). Furthermore, innovative instructional media have been proven to improve students' Arabic language abilities through more engaging and contextual learning experiences (Maulidi et al., 2024). The use of instructional media and teaching materials designed according to students' needs and learning characteristics is therefore considered an important factor in improving the quality of Arabic language learning (Tomlinson, 2023).

One instructional approach that has received increasing attention is game-based learning. Interactive and game-based instructional activities are capable of enhancing students' motivation, participation, and learning achievement by creating meaningful learning experiences that combine cognitive engagement with enjoyable classroom interaction. Theoretically, instructional media that integrate visual elements and active learning activities can strengthen students' cognitive processing and improve understanding of learning materials (Johnson & Mayer, 2009). Consequently, game-based instructional media have considerable potential to improve the effectiveness of Arabic language learning.

One example of game-based instructional media is the spinning wheel. Spinning wheel media are simple instructional tools in the form of a circular wheel divided into

several sections containing questions, tasks, or learning prompts. During classroom activities, students take turns spinning the wheel and responding to the assigned tasks, thereby encouraging participation, collaboration, and critical thinking. This instructional medium adopts a quiz-competition approach that is engaging while taking into account students' characteristics and learning needs, particularly their tendency to enjoy playing, being physically active, and working collaboratively in groups (Kristina et al., 2020). Moreover, spinning wheel media can be implemented without relying on digital technology, making them particularly suitable for educational settings with limited technological infrastructure.

Previous studies have reported positive outcomes associated with the use of spinning wheel instructional media. (Istinawati et al., 2023) found that spinning wheel media were effective in improving Arabic vocabulary mastery among madrasah students. Similarly, (Ni'mah et al., 2021) reported that wheel-based instructional media contributed positively to the improvement of speaking skills (maharah al-kalam). Other studies also demonstrated that spinning wheel media increased students' participation and enhanced learning outcomes by encouraging direct involvement in learning activities ((Indriyani et al., 2024; Solichah et al., 2023). In addition, research on interactive instructional media more broadly has consistently shown their potential to create effective and enjoyable learning environments (Fanreza et al., 2024). These findings indicate that game-based instructional media have considerable potential to support more engaging Arabic language learning.

Although previous studies have provided valuable insights, several limitations remain evident in the existing literature. First, most previous studies were conducted at the elementary school or Madrasah Tsanawiyah level, while empirical evidence at the Madrasah Aliyah level remains limited. Second, previous research has primarily focused on specific language competencies, such as vocabulary mastery and speaking skills, rather than examining broader Arabic learning outcomes. Third, while technology-assisted and digital instructional media have received increasing scholarly attention, relatively limited research has investigated the effectiveness of non-digital interactive spinning wheel media in educational environments where technological resources remain constrained. As a result, there is still insufficient empirical evidence regarding the extent to which non-digital spinning wheel media can effectively improve Arabic learning outcomes among Madrasah Aliyah students.

Addressing this gap is important because many Islamic educational institutions continue to face technological limitations that restrict the implementation of digital

learning media (Bahri et al., 2023). Under such circumstances, the development and evaluation of simple, affordable, and interactive instructional media remain highly relevant. Understanding the effectiveness of non-digital game-based instructional media may provide practical solutions for schools with limited technological resources while simultaneously enriching the broader discussion on instructional media effectiveness.

The novelty of this study extends beyond the contextual application of non-digital spinning wheel media in a madrasah with limited technological facilities. Conceptually, this study contributes to the ongoing discussion regarding the assumption that effective interactive learning depends primarily on digital technology. This study is expected to provide additional evidence that the effectiveness of instructional media may depend more on student interaction, engagement, and active participation than on technological sophistication alone. Furthermore, this study contributes to the theoretical perspective of game-based learning by examining whether the motivational and engagement mechanisms underlying game-based activities can be achieved through both digital and non-digital media. In the context of Arabic language education, this study contributes to the development of game-based learning and instructional media literature by examining the potential of non-digital interactive media as an effective instructional alternative for improving learning outcomes.

Therefore, further empirical investigation is required to examine whether non-digital spinning wheel media can effectively improve Arabic learning outcomes in the context of Madrasah Aliyah.

Based on the identified problems and research gaps, this study addresses the following research question: "Is the use of non-digital spinning wheel instructional media effective in improving the Arabic learning outcomes of Madrasah Aliyah students?"

Accordingly, this study aims to examine the effectiveness of non-digital spinning wheel instructional media in improving students' Arabic learning outcomes at Madrasah Aliyah As'ad Jambi. The study is expected to contribute theoretically to the development of research on interactive and game-based Arabic language learning and practically to provide affordable, engaging, and effective instructional media alternatives for schools with limited access to educational technology.

RESEARCH METHOD

This study employed a quantitative approach using a quasi-experimental method

with a non-equivalent control group design. This design was used to determine the effectiveness of non-digital spinning wheel instructional media on students' Arabic learning outcomes. The study involved two groups: an experimental group that received treatment using non-digital spinning wheel media and a control group that was taught using conventional teaching methods. Both groups were administered pre-tests and post-tests to identify differences in learning outcomes before and after the treatment (Creswell, 2018).

Table. Quasi-Experimental Design

Non-Equivalent Control Group Design			
Group	Pre-test	Treatment	Post-test
Experimental Group	01	X	02
Control Group	01	-	02

The population of this study consisted of all eleventh-grade students of Madrasah Aliyah As'ad Jambi in the 2025/2026 academic year. The research sample was selected using a purposive sampling technique. The selection process was conducted in consultation with the Arabic language teacher and school administration based on several criteria: (1) both classes were enrolled in the same grade level (Grade XI), (2) both classes were taught by the same Arabic language teacher, (3) both classes followed the same curriculum and learning objectives, and (4) the classes had relatively comparable academic characteristics according to the school's academic records. Based on these considerations, Class XI A was assigned as the experimental group and Class XI B was designated as the control group, with a total of 66 students participating in the study (Sugiyono, 2018). The experimental group received treatment through the use of non-digital spinning wheel instructional media made from simple materials such as cardboard and paperboard, whereas the control group participated in Arabic language learning through conventional teaching methods without the use of the instructional media (Creswell, 2018).

The research instrument used in this study was an objective multiple-choice test consisting of a pre-test and a post-test. The instrument was developed based on Arabic language learning indicators that were adjusted to the instructional materials taught during the study. The pre-test was administered before the treatment to determine students' initial abilities, while the post-test was conducted after the treatment to measure the improvement in students' learning outcomes following the use of non-digital spinning wheel instructional media (Arikunto, 2013).

The research instrument was tested for validity using content validity through expert judgment conducted by lecturers and Arabic language teachers. In addition, the reliability of the instrument was analyzed using Cronbach's Alpha through SPSS software. The results of the analysis indicated that the research instrument had an adequate level of reliability and was therefore suitable for measuring students' Arabic learning outcomes (Field, 2018).

The research data were analyzed using SPSS software. The data analysis began with normality and homogeneity tests to determine the distribution of the data and the equality of variances between the groups. Since the data were not normally distributed, hypothesis testing was conducted using the Mann-Whitney U test to identify differences in learning outcomes between the experimental group and the control group (Field, 2018).

In addition to the Mann-Whitney U test, an effect size analysis was conducted to determine the magnitude of the treatment effect. The effect size (r) was calculated using the formula $r = |Z|/\sqrt{N}$, where Z represents the standardized test statistic and N represents the total number of participants. The interpretation of effect size followed Cohen's criteria, in which $r = 0.10$ indicates a small effect, $r = 0.30$ a medium effect, and $r = 0.50$ a large effect.

The study was conducted through several stages, namely preliminary observation, administration of the pre-test, implementation of the treatment using non-digital spinning wheel media in the experimental group, and administration of the post-test in both research groups. During the learning process, the control group was taught using conventional teaching methods (Creswell, 2018). The learning process in both groups was carried out within the same instructional duration and taught by the same teacher to maintain the consistency of the research treatment.

In the experimental group, the learning process was conducted using non-digital spinning wheel media designed to support interactive Arabic language learning activities. The spinning wheel media were utilized in question-and-answer activities, vocabulary exercises, reading simple texts, and evaluating learning materials. During the implementation, students were instructed to spin the wheel to determine the questions or tasks that had to be completed based on the materials they had learned.

After spinning the wheel, students answered the questions or completed the assigned tasks individually or in groups. The teacher provided guidance, explanations, and feedback on students' responses throughout the learning process. The use of spinning wheel media aimed to increase students' participation, attention, and

motivation through more enjoyable and interactive learning activities. Meanwhile, the control group carried out the learning process using conventional teaching methods without the use of spinning wheel media.

RESULT AND DISCUSSION

RESULTS

This study involved two research groups, namely an experimental group and a control group. The experimental group received treatment using non-digital spinning wheel instructional media, while the control group was taught using conventional teaching methods. Data on students' learning outcomes were obtained through the administration of a post-test after the completion of the learning process. Data analysis was conducted using SPSS software to determine the differences in learning outcomes between the two research groups (Field, 2018).

Before hypothesis testing was conducted, the post-test data were first analyzed using the Shapiro–Wilk normality test. The results indicated that the learning outcome data were not normally distributed (significance value < 0.05). Therefore, the analysis of differences in learning outcomes between the control group and the experimental group was carried out using the non-parametric Mann–Whitney U test.

The data analysis was conducted on the post-test scores of students in the experimental and control groups to determine the differences in learning outcomes after the treatment had been administered.

Table 1.

Descriptive Statistics of Post-Test Scores

No	Group	N	Mean Rank	Sum of Ranks
1	Control Group	33	25,30	835,00
2	Experimental Group	33	41,70	1376,00
	Total	66		

The results indicated that the use of non-digital spinning wheel instructional media had a positive effect on students' Arabic learning outcomes at Madrasah Aliyah As'ad Jambi. The experimental group achieved higher scores than the control group. Students in the experimental group also appeared more active and enthusiastic during the learning process compared to those in the control group. This pattern is reflected in the higher mean rank obtained by the experimental group (41.70) compared to the

control group (25.30).

Table 2.

Mann-Whitney U Test Results

No	Test Statistics	Value
1	Mann-Whitney U	274,000
2	Wilcoxon W	835,000
3	Z	-3,540
4	Asymp. Sig. (2-tailed)	< 0,05

The results of the Mann-Whitney U test showed that the significance value was lower than 0.05 ($U = 274.000$, $Z = -3.540$, $p < .001$). Therefore, there was a significant difference between the learning outcomes of students in the experimental group and those in the control group. To determine the magnitude of the treatment effect, an effect size analysis was conducted. The calculated effect size was $r = 0.44$, indicating a moderate effect according to Cohen's criteria. These findings suggest that the use of non-digital spinning wheel instructional media contributed meaningfully to the improvement of students' Arabic learning outcomes, with a moderate practical effect that indicates educational significance beyond statistical significance alone.

DISCUSSION

The findings of this study indicate that the use of non-digital spinning wheel instructional media significantly improved students' Arabic learning outcomes compared to conventional instructional methods. The Mann-Whitney U test demonstrated a statistically significant difference between the experimental group and the control group, indicating that students who learned through spinning wheel media achieved better learning outcomes. These findings suggest that the integration of interactive and game-based activities into Arabic language learning can facilitate students' engagement, concentration, and understanding of learning materials.

The results support the view that instructional media play a crucial role in enhancing the effectiveness of the learning process. According to (Pito, 2018), instructional media serve as important tools for delivering learning content more clearly and effectively. Similarly, instructional media can improve students' motivation and

academic achievement by making learning activities more engaging and meaningful (Wati & Muhsin, 2019). The positive outcomes observed in the present study indicate that spinning wheel media successfully functioned as a learning facilitator that encouraged students to participate actively in classroom activities.

The findings are also consistent with language learning theories emphasizing the importance of meaningful learning experiences and active learner participation. (Richards & Rodgers, 2014) argued that effective language learning requires instructional approaches that actively involve learners in the learning process. Likewise, (Tomlinson, 2023) emphasized that instructional materials should be designed according to learners' characteristics and learning needs. In this study, the spinning wheel media provided opportunities for students to interact with learning materials through enjoyable and participatory activities, thereby supporting more effective learning experiences.

One possible explanation for the effectiveness of spinning wheel media lies in its game-based learning characteristics. (Plass et al., 2015) explained that game-based learning environments can increase students' motivation, engagement, and learning achievement through interactive activities that combine cognitive and emotional involvement. Similar findings were reported by (Malakeh.Z. Malak, 2024), who found that gamified learning activities positively influenced students' academic achievement and learning engagement. The spinning wheel used in this study incorporated elements of challenge, competition, curiosity, and active participation, which may have contributed to the improvement of students' learning outcomes.

The results of this study are also in line with previous studies specifically examining spinning wheel instructional media. (Istinawati et al., 2023) found that spinning wheel media effectively improved students' Arabic vocabulary mastery in madrasah settings. Similarly, (Ni'mah et al., 2021) reported that wheel-based instructional media positively contributed to the development of students' speaking skills (maharah al-kalam). Although the present study focused on broader Arabic learning outcomes rather than specific language skills, the findings reinforce previous evidence that spinning wheel media can support various aspects of Arabic language learning.

Furthermore, the findings are consistent with studies conducted outside Arabic language contexts. (Indriyani et al., 2024) found that spinning wheel media improved students' learning outcomes by encouraging active participation during classroom activities. Likewise, (Solichah et al., 2023) reported that spinning wheel instructional media increased students' engagement and facilitated a more interactive learning

environment. These findings suggest that the effectiveness of spinning wheel media may not be limited to a particular subject area but may instead be associated with its ability to promote active learning and student involvement.

The increased participation observed during the implementation of spinning wheel activities supports the findings of (Fanreza et al., 2024), who emphasized that interactive instructional media can create more effective and enjoyable learning environments. Similarly, (Rahmawati, 2023) argued that instructional media that encourage interaction can improve students' engagement and learning experiences. During the implementation of the spinning wheel activities, students demonstrated greater enthusiasm, participation, and willingness to answer questions compared to students who learned through conventional methods. Such active engagement may have contributed to the higher learning outcomes achieved by the experimental group.

The findings also support previous studies highlighting the importance of instructional innovation in Arabic language learning. (Maulidi et al., 2024) reported that innovative instructional media improved students' Arabic language abilities by creating more engaging and contextual learning experiences. Likewise, (Suryadarma et al., 2025) emphasized that the effectiveness of Arabic language learning is strongly influenced by the suitability of instructional approaches and media to students' characteristics. In the present study, the spinning wheel media appeared to align well with students' preference for interactive and collaborative learning activities.

From a pedagogical perspective, the results also support the argument that students' motivation and participation play essential roles in successful Arabic language learning. (Maghfiroh et al., 2025) found that learning strategies emphasizing interaction and active participation positively contribute to Arabic language achievement. Similarly, (Toto Edidarmo et al., 2025) highlighted the importance of motivational strategies in Arabic language instruction. The spinning wheel activities implemented in this study encouraged students to participate actively, collaborate with peers, and engage with learning materials in a more enjoyable manner, thereby potentially enhancing both motivation and academic performance.

Another important finding concerns the relevance of non-digital instructional media in contemporary educational contexts. Current educational discussions often emphasize the importance of digital technology in enhancing learning effectiveness. However, the findings of this study suggest that instructional effectiveness may depend not only on technological sophistication but also on the quality of pedagogical design and student engagement. This finding indicates that meaningful interaction,

participation, immediate feedback, and learner-centered activities remain fundamental determinants of successful learning regardless of whether instructional media are digital or non-digital.

From a theoretical perspective, this study contributes to the literature on game-based learning and Arabic language education by extending existing understandings of how game-based learning mechanisms operate in classroom settings. (Plass et al., 2015) argued that engagement, motivation, and active participation are central components of effective game-based learning. The findings of the present study support this perspective while also extending it by demonstrating that these mechanisms can be achieved through non-digital instructional media. Therefore, the study suggests that the effectiveness of game-based learning may be influenced more by pedagogical design and learner participation than by the technological format of the instructional media itself. In the context of Arabic language education, this finding broadens current theoretical discussions by providing empirical evidence that interactive learning environments can be successfully developed in schools with limited technological resources while still producing meaningful improvements in learning outcomes. This finding contributes to the growing debate on whether educational effectiveness is primarily determined by technological advancement or by the quality of instructional design, suggesting that pedagogical interaction may be a more fundamental factor in successful language learning.

Practically, the findings indicate that non-digital spinning wheel media can serve as an effective instructional alternative for Arabic language teachers, particularly in schools with limited technological facilities. The media are relatively inexpensive, easy to develop, and adaptable to different learning materials. Therefore, spinning wheel media may provide a practical solution for improving student engagement and learning outcomes in educational environments where access to digital technology remains limited.

Despite these contributions, several limitations should be acknowledged. First, the study was conducted in only one madrasah and involved a relatively limited number of participants, which may restrict the generalizability of the findings. Second, the study focused primarily on cognitive learning outcomes and did not directly measure students' motivation, engagement, or attitudes toward learning. Third, external factors such as classroom environment, teacher characteristics, and students' individual learning preferences may also have influenced the results. Future studies are therefore recommended to involve larger and more diverse samples, examine affective and

psychomotor learning outcomes, and compare the effectiveness of digital and non-digital game-based instructional media in Arabic language learning.

CONCLUSION

This study demonstrated that the use of non-digital spinning wheel instructional media significantly improved students' Arabic learning outcomes at Madrasah Aliyah As'ad Jambi. The Mann-Whitney U test revealed a statistically significant difference between the experimental and control groups, indicating that students who learned through spinning wheel media achieved better learning outcomes than those who received conventional instruction.

Beyond confirming the effectiveness of the instructional intervention, the findings highlight the importance of learner engagement, active participation, and meaningful interaction in Arabic language learning. The results suggest that the effectiveness of instructional media may depend not only on technological sophistication but also on the quality of pedagogical design and the extent to which students are actively involved in the learning process. This finding contributes to the growing literature on game-based learning by providing empirical evidence that the motivational and engagement mechanisms associated with game-based learning can be achieved through non-digital instructional media.

In the context of Arabic language education, this study extends current discussions on instructional media by demonstrating that interactive learning environments can be effectively developed using simple and affordable resources. The findings therefore contribute to the theoretical development of game-based learning and instructional media research by emphasizing the central role of pedagogical interaction rather than technological format in supporting learning outcomes.

Practically, non-digital spinning wheel media may serve as a feasible instructional alternative for Arabic language teachers, particularly in schools and madrasahs with limited technological facilities. The media are inexpensive, easy to implement, and adaptable to various learning materials, making them a practical strategy for enhancing student participation and academic achievement.

Future studies are recommended to investigate the effects of spinning wheel media on students' learning motivation, engagement, and attitudes toward Arabic language learning. Further research may also examine its effectiveness in developing specific Arabic language skills, including listening (*maharah al-istima'*), speaking (*maharah al-kalam*), reading (*maharah al-qira'ah*), and writing (*maharah al-kitabah*). In

addition, studies involving larger and more diverse samples, as well as comparisons between digital and non-digital game-based instructional media, would provide a deeper understanding of the factors influencing the effectiveness of Arabic language learning.

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