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# Development of Android-Based Learning Media Using iSpring Suite to Improve Arabic Vocabulary Mastery Among Students

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## ABSTRACT

**Purpose –** This research aims to develop an Android-based Arabic learning media using iSpring Suite to enhance the Arabic vocabulary mastery of 5th-grade students at MI Terpadu Al Ishlah, Gorontalo.

**Design/methods/approach –** The research applied the 4D Thiagarajan model for Research and Development, involving stages of definition, design, development, and dissemination. Data were collected using expert validation, questionnaires and pre-test-post-test results.

**Findings –** The expert validation scores from language, material, and media experts were 84%, 96%, and 82% respectively, indicating the "Very Feasible" category. The overall validation from the three experts reached 86%, confirming the media as "Very Feasible." Descriptive analysis showed an increase in students' vocabulary mastery, with the pre-test average score of 28.27 rising to 39.86 in the post-test, highlighting a significant improvement.

**Research implications/limitations –** Despite its success, the study's limitations include a narrow focus on vocabulary without broader language skills.

**Originality/value –** This research provides an innovative approach to integrating mobile learning into Arabic language education, particularly through interactive digital tools like iSpring Suite, offering valuable insights for future development in educational media.

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## Introduction

The issue of Arabic vocabulary mastery among fifth-grade students at MI Terpadu Al Ishlah, Gorontalo, has become a pressing concern. Through observations conducted by teachers and interviews with students, it was revealed that many students struggle to understand and memorize new vocabulary being taught. Initial assessment results indicated that the average vocabulary mastery score of students was only 28.27, significantly below the expected standard. This decline clearly impedes their ability to communicate in Arabic, which is the primary goal of foreign language learning.

One of the main contributing factors to this difficulty is the low reading interest among students. Many students are not accustomed to reading books or supplementary materials related to Arabic (Setianingsih & Robbani, 2024). This is further exacerbated by the lack of engaging and interactive learning media at the school, making it difficult to capture students' attention. Conventional learning media, such as textbooks, often fail to present a lively and relevant context, leading students to struggle with understanding vocabulary in a broader context (Ma'ruf & Mathoriyah, 2024).

To gain a deeper understanding, an assessment was conducted involving Arabic language teachers. Through interviews and questionnaires, teachers provided insights into the teaching materials delivered and the students' need for more interactive media. The results revealed that most teachers agreed on the necessity of a more innovative and engaging learning approach to improve students' vocabulary mastery. Many teachers expressed concerns about the lack of teaching tools that could help students grasp vocabulary in a more interesting and effective way.

Based on the observations and assessment, it is evident that there is a pressing need to develop learning media that can support students in mastering Arabic vocabulary. The proposed media should capture students' interest, facilitate enjoyable learning, and provide a clear context for the vocabulary being taught (Alatas, 2023). Therefore, the development of iSpring Suite media emerges as a strategic solution to address this issue, with the aim of improving Arabic vocabulary mastery among students.

iSpring Suite is an essential tool in the context of Arabic language learning, especially in today's digital era. One of the main reasons for choosing iSpring Suite is its ability to create interactive and engaging learning materials (Fitriawati & Harmanto, 2023). With features that allow PowerPoint presentations to be converted into Android-based applications, iSpring Suite provides greater accessibility for students. This is particularly important, as many students today have smartphones that they can use to learn anywhere and anytime. By utilizing iSpring Suite, learning materials are not only presented in a static format but can be accessed dynamically, allowing students to learn in a more flexible manner.

Moreover, iSpring Suite offers various interactive features such as quizzes, simulations, and assessments that students can complete directly (Fitriani et al., 2024). These features not only increase student engagement but also enable them to evaluate their understanding in real time. With immediate feedback, students can identify and correct their mistakes promptly, which is a crucial element in the learning process. This approach contrasts with traditional learning methods, which often do not provide opportunities for students to interact directly with the material.

The ease of content creation is also one of the key advantages of iSpring Suite. Teachers can easily integrate various multimedia elements, such as images, audio, and video, to create more engaging and diverse learning materials. The use of visual and audio

media in Arabic language learning is particularly important as it helps students better understand the context and application of vocabulary (Hayatunnisa & Hanafi, 2024). In other words, iSpring Suite not only functions as a teaching aid but also as a creative platform that allows teachers to design learning experiences tailored to students' needs (Diraysidi et al., 2024).

The interactivity offered by iSpring Suite also plays a crucial role in enhancing student motivation. Students who actively engage in the learning process tend to show greater interest in the material being taught. When students can interact with content through quizzes and simulations, they feel more involved and motivated to learn (Putri, 2024). This approach is especially relevant in language learning, where mastery of new vocabulary often depends on how actively students engage in the learning process. With the right media, students can feel more confident in their learning journey, ultimately improving their success in mastering the Arabic language (Parhan et al., 2023).

With its various advantages, iSpring Suite proves to be the right choice to address the challenges of Arabic vocabulary acquisition among fifth-grade students at MI Terpadu Al Ishlah. The use of this media is expected to create a more interactive, enjoyable, and effective learning environment, enabling students to achieve learning objectives more successfully.

Numerous studies have shown that the use of interactive media in foreign language learning can significantly enhance students' vocabulary acquisition. Research indicates that students who engage in learning through interactive applications or digital media experience significant improvements in vocabulary comprehension compared to those who learn through conventional methods (Chalik, 2022). This suggests that interactivity in learning, such as that offered by platforms like iSpring Suite, can have a positive impact on the effectiveness of language learning.

Moreover, other studies emphasize the importance of technology in language teaching. Research shows that students who use digital media to learn not only acquire new vocabulary more quickly but also retain it for a longer period (Nurdiniawati, M. Pd, Nurdiniawti, 2020). The interactive and enjoyable learning experience helps strengthen students' memory of the vocabulary they learn.

Furthermore, empirical evidence demonstrates that innovative learning media, such as mobile applications, are highly effective in enhancing students' learning motivation (Suhartiningsih & Safirah, 2023). Students who use apps for learning foreign languages show higher engagement levels and better results in vocabulary acquisition (Nursyamsiah, 2021). These findings suggest that vocabulary acquisition depends not only on the teaching methods employed but also on how well the media captures students' attention and actively involves them.

Thus, the findings of this research provide strong support for the development of iSpring Suite as an effective learning tool. Given iSpring Suite's ability to create interactive and engaging learning experiences, it is hoped that this media can significantly contribute to enhancing vocabulary acquisition among fifth-grade students at MI Terpadu Al Ishlah. This evidence-based approach is expected not only to improve students' learning outcomes but also to inspire the development of more innovative Arabic language teaching methods in the future.

To support this claim, empirical evidence from various studies demonstrates that the use of interactive learning media, including mobile applications and platforms like iSpring Suite, can offer significant solutions for students who face challenges in vocabulary

acquisition. Research by Hwang and Chang (2011) indicates that mobile-based learning environments can enhance student learning outcomes, including vocabulary acquisition in language learning contexts (Fan et al., 2023). Additionally, Clark and Mayer (2016) summarize various studies showing that interactive elements in e-learning, such as quizzes and simulations, significantly improve student engagement and comprehension of the material being taught (Ghai & Tandon, 2022).

Furthermore, research by Alqahtani and Alghamdi (2019) found that students who used mobile applications for learning showed improved motivation and better learning outcomes in vocabulary acquisition (Alghamdi & Aldossari, 2021). This finding aligns with a study by Stockwell (2012), which shows that mobile use in vocabulary learning activities can significantly improve students' learning outcomes (Kai & Hua, 2021). This highlights the potential of technology to support more effective vocabulary acquisition.

Finally, Hamari, Koivisto, and Sarsa (2016) suggest that gamification in learning, often applied in interactive learning apps, can boost student engagement and learning outcomes, including vocabulary acquisition (Innovations, 2024). Thus, these empirical findings support the argument that interactive learning media, such as iSpring Suite, can effectively help students overcome difficulties in learning Arabic vocabulary while creating a more engaging and enjoyable learning experience.

Based on the analysis conducted, it can be concluded that the use of interactive learning media, such as iSpring Suite, holds great potential in enhancing Arabic vocabulary acquisition among fifth-grade students at MI Terpadu Al Ishlah. The supporting empirical evidence shows that interactive media not only improves learning outcomes but also increases student motivation and engagement in the learning process. Therefore, integrating technology into foreign language teaching is a strategic step that educators must take.

Recommendations for the implementation of iSpring Suite in Arabic language learning include several aspects. First, it is crucial for teachers to receive adequate training in using iSpring Suite to maximize its interactive features. This training will help teachers design engaging and appropriate learning materials that meet students' needs. Second, the development of relevant and contextual content is necessary so that students can easily relate the vocabulary they learn to real-life situations.

Additionally, periodic evaluations of the effectiveness of using this learning media are also essential. By collecting feedback from students and assessing their progress, teachers can adjust their teaching methods and the content they deliver. Finally, collaboration between teachers, students, and school authorities in creating a supportive learning environment for technology use will be highly beneficial in achieving the desired learning outcomes.

By implementing these recommendations, it is expected that iSpring Suite can become an effective tool in enhancing Arabic vocabulary acquisition and promote innovation in teaching methods in the future.

## Methods

This study employs a mixed-method approach, combining qualitative and quantitative methods to achieve a more comprehensive understanding of the effectiveness of the developed learning media. The development model adopted is Thiagarajan's 4D

model, which consists of four stages: Definition, Design, Development, and Dissemination (Yohanes Bare, 2021).

In the definition stage, students' needs and learning objectives are identified. Subsequently, in the design stage, learning materials are developed using iSpring Suite to create interactive content, which is then converted into an Android application. In the development stage, the learning media product is created and refined based on feedback from experts, including language experts, subject matter experts, and media experts. Finally, in the dissemination stage, the learning media is distributed to students for testing and evaluation.

Data collection was conducted through observations, interviews with teachers, and questionnaires to gather feedback from students after using the learning media. The product trial was carried out at MI Terpadu Al Ishlah, Gorontalo, involving 51 fifth-grade students as research participants. The trial setting included an initial test (pretest) to measure students' baseline Arabic language skills before using the learning media, followed by a final test (posttest) to assess the improvement in students' vocabulary mastery after using the learning media.

Data analysis was conducted using the percentage formula (p = $\frac{\int}{\eta} \boldsymbol{x}\ \mathbf{100}\%$), where ($\int$ ) represents the total score and ($\eta$) is the number of respondents. Additionally, descriptive statistical analysis was performed using SPSS software, including normality tests to determine the appropriate analytical method, whether parametric or non-parametric, based on the data distribution.

The testing process for the developed learning media was carried out in several structured stages over a three-week period. Initially, students were tested to measure their baseline Arabic language skills before using the developed learning media. This initial testing aimed to assess students' prior knowledge before the intervention. Following the initial testing, the learning media was designed and developed based on the needs analysis conducted earlier. Subsequently, students utilized the media and participated in a pretest to measure their vocabulary mastery, which was conducted on June 3, 2024.

After the students used the learning media, a posttest was conducted on June 11, 2024, to evaluate the improvement in their vocabulary mastery. By comparing the pretest and posttest results, the impact of using the iSpring Suite learning media on students' mastery of Arabic vocabulary could be accurately measured.

To analyze the collected data, this study examines several aspects to assess the feasibility of the Arabic vocabulary learning media product "At the Canteen." The analyzed aspects include material feasibility, media feasibility, and language feasibility.

Material feasibility is assessed to ensure the alignment of the learning content with the curriculum and the students' needs. In this context, a percentage formula is employed to determine the feasibility percentage based on evaluations from subject matter experts.

Media feasibility is measured to evaluate the extent to which the media design meets good criteria, such as visual appearance, navigation, and interactivity. This assessment also uses a percentage formula to obtain the feasibility rating from media experts.

Additionally, language feasibility is evaluated to ensure that the language used in the learning content is appropriate, clear, and easy to understand. Evaluations from language experts are calculated in percentage terms, providing a clear picture of the quality of language used in the product. The use of a percentage formula in this analysis

allows researchers to objectively and systematically measure each aspect of the product's feasibility.

User responses are also a critical aspect analyzed in this study. Feedback from students after using the learning media is collected to assess their level of satisfaction and engagement. This data is analyzed using a percentage formula, enabling the results from all aspects to be combined and providing a comprehensive overview of the product's overall feasibility. With this approach, this study aims to ensure that the developed learning media is not only innovative but also effective and aligned with the learners' needs.

Subsequently, the percentage results obtained were categorized using a 5-level Likert scale. Based on the percentage scores, several standard evaluation categories were applied (Mustari S. Lamada, Fathahillah, Aulyah Zakilah Ifani, 2022).

**Table 1**

*Standard Evaluation Categories*

| Evaluation Category | Percentage Score | Description |
|---|---|---|
| Highly Appropriate | 81% - 100% | Very high level of success |
| Appropriate | 61% - 80% | Good level of success |
| Moderately Appropriate | 41% - 60% | Adequate level of success |
| Less Appropriate | 21% - 40% | Unsatisfactory level of success |
| Very Less Appropriate | 0% - 20% | Very low level of success |

*Note: This evaluation serves as a comprehensive reference for assessing the success of an activity or product based on the established standards.*

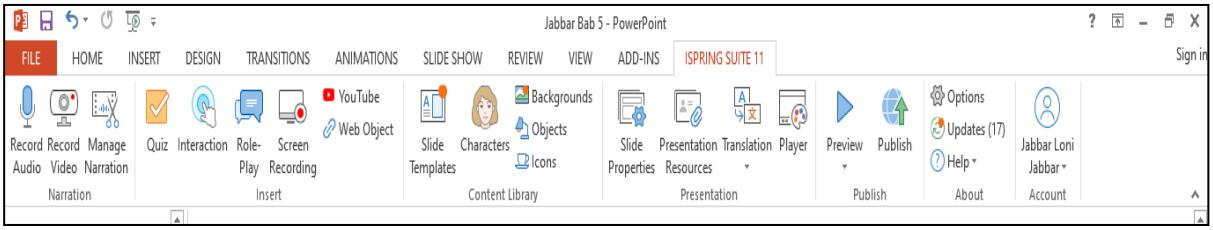
## Result

The results of the development of learning media products using the 4D design model (Define, Design, Develop, and Disseminate) demonstrated a systematic and structured process. In the define stage, students' needs were identified through an analysis of characteristics and the clear establishment of learning objectives. Subsequently, in the design stage, the learning materials were created utilizing iSpring Suite, enabling the development of interactive content that was later converted into an Android application.

This development process involves various stages, starting from design to implementation. Below is a series of images illustrating the key steps in creating this learning media.

**Figure 1**

*Ispring Menu Display in Microsoft Power Point*



The menu display in Figure 1 illustrates the initial interface of the iSpring Suite application integrated with PowerPoint. The subsequent step involves designing learning material content by utilizing various tools provided in the iSpring Suite menu bar.

**Figure 2**

*Initial Design Display*

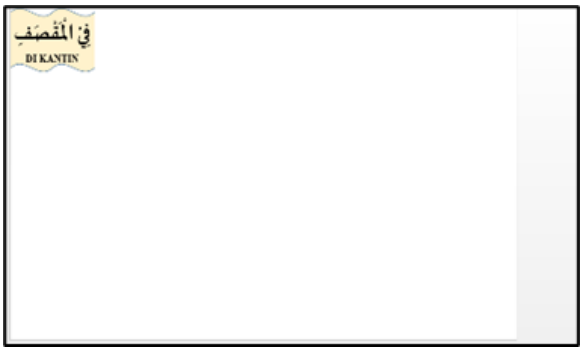
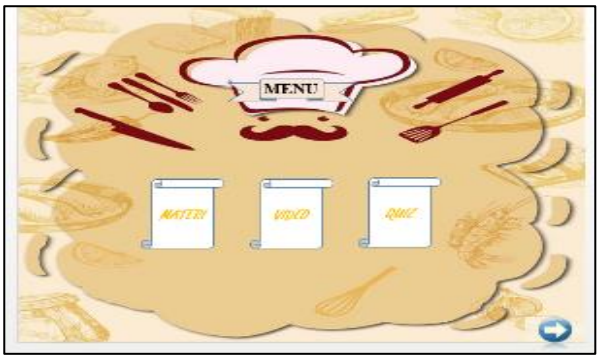



Figure 2 depicts the initial design of the planned learning material and illustrates the elements to be utilized in the application. With the initial design established, it is crucial to capture students' attention through the material's cover. Below is the display of the Arabic vocabulary learning media, titled “In the Cafeteria,” that has been designed.

**Figure 3**

*Learning Media Design Using iSpring Suite, **(a)** Cover Page Design of the Learning Materials; **(b)** Menu Page Design of the Learning Materials; **(c)** Description Page Design of the Learning Materials; **(d)** Content Page Design of the Learning Materials*


(a)




(b)


(c)


(d)

In Figure 3, image **(a)** shows a cover designed to capture students' attention and generate initial interest in the material to be studied. From this point, students can easily navigate through various options via the learning menu display.

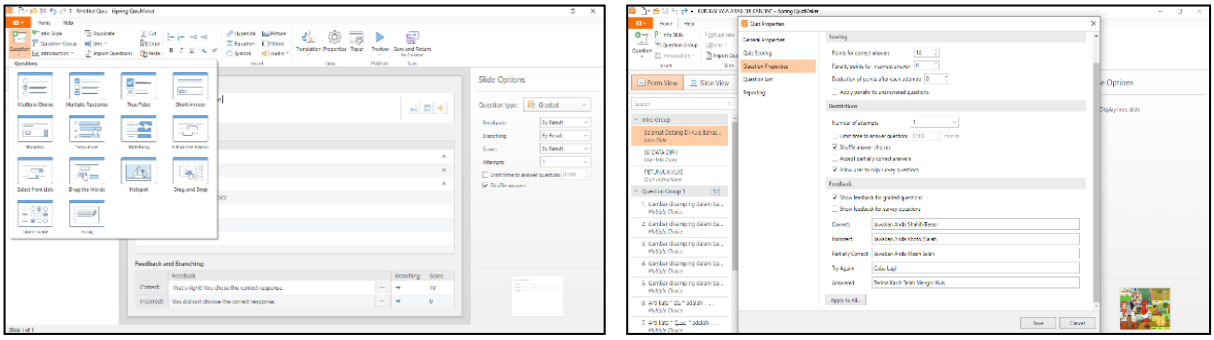
Image **(b)** illustrates the application's main menu, enabling students to conveniently access different learning options. Upon selecting an option, students are provided with a clear description of the material to be taught.

The material description in image **(c)** offers clear context for the vocabulary being taught, helping students understand word usage in sentences. With this enhanced understanding, the process can proceed to a more detailed material display.

Image **(d)** presents a detailed view of the learning material, which integrates text and multimedia elements for a richer learning experience. Once the material is prepared, it is equally important to create multiple-choice quizzes for evaluation purposes.

**Figure 4**

*Quiz display in iSpring Suite, **(a)** Quiz selection menu; **(b)** The process of creating a multiple-choice vocabulary quiz.*

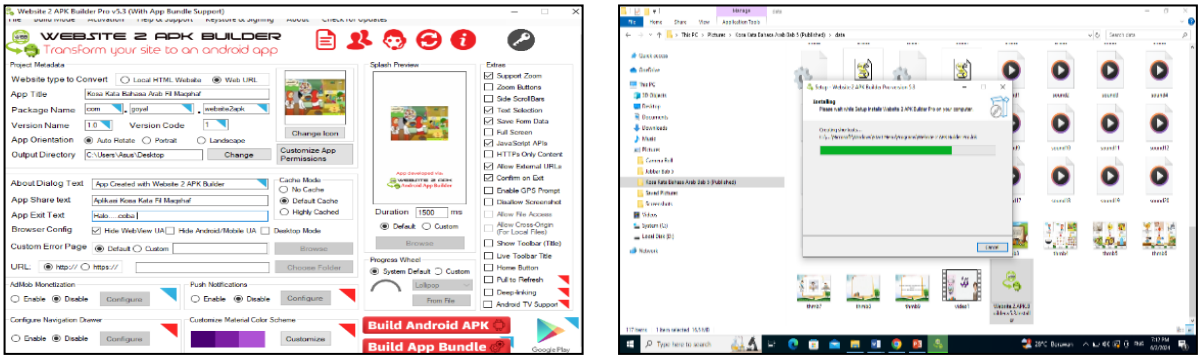


**(a)** **(b)**

Image (a) illustrates the quiz selection interface, designed to assess students' understanding of the material covered. The subsequent step involves the quiz creation process, ensuring active student engagement during evaluation. Image (b) depicts the process of creating multiple-choice quizzes focused on vocabulary. After installation, the tool is automatically integrated with Microsoft PowerPoint. The researcher utilized the combination feature with HTML5 to integrate the content into an Android application format (APK).

**Figure 5**

*Process of Combining and Installing the Application: **(a)** Integration of HTML5 with Website.2.APK.Builder.V5.3. Installer; **(b)** Application installation process using Website.2.APK.Builder.V5.3. Installer*

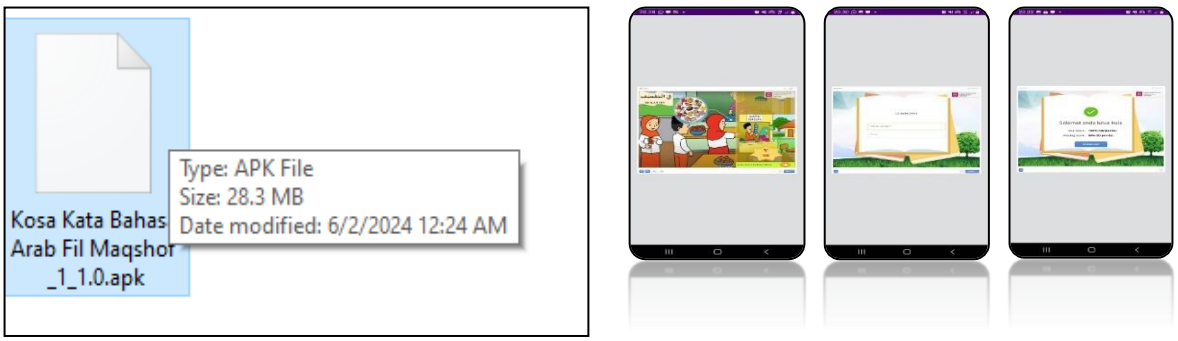



(a) (b)

Figure 5 (a) illustrates the technical steps required to convert iSpring content into an Android application accessible to students on mobile devices. The next step is the installation process. In Figure 5 (b), the designed application is prepared for installation, ensuring all features function properly to deliver an optimal learning experience. After the installation process, a preview of the developed product is displayed.

**Figure 6**

*Final Media Product: (a) APK Product Preview; (b) Main Screen Display on Android and Quiz Interface on Android*




(a) (b)

Figure 6 (a) provides a final preview of the developed product, showcasing the application's appearance before being distributed to students. Following the preview, Figure 6 (b) illustrates the main screen display of the application on Android devices, highlighting a user-friendly interface. With the main screen ready, the figure also demonstrates how quizzes can be accessed and answered by students on Android devices, emphasizing interactivity and engagement in the learning process. With these elements, the learning media is expected to enhance students' vocabulary mastery effectively.

During the development phase, the learning media product was refined based on validation by experts, including language experts, subject matter experts, and media experts (Alfianti, Taufik, and Hakim, 2020). This process is critical to ensure the media meets three essential feasibility criteria.

### Validation by Language, Subject Metter, and Media Ecperts

The evaluation of the iSpring Suite-based learning media by language, subject metter, and media experts using a Likert scale is in tables bellow.

**Table 2**

*Results of Language Expert Evaluation on iSpring Suite-Based Learning Media*

| No | Aspect Evaluated | Score | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 1 | Readability of iSpring Suite media on Android applications | | | | ✓ | |
| 2 | Clarity of fonts in iSpring Suite media on Android applications | | | | | ✓ |
| 3 | Accuracy of Arabic vocabulary and its meaning | | | | | ✓ |
| 4 | Accuracy of vocabulary selection and spelling | | | | | ✓ |
| 5 | Consistency in punctuation usage | | | | ✓ | |
| 6 | Selection of words and sentences that are concise, clear, common, and not complicated | | | | ✓ | |
| 7 | Use of communicative language | | | | ✓ | |
| 8 | Language alignment with the target users in iSpring Suite media on Android applications | | | | ✓ | |
| 9 | Images and audio used reflect the intended message or information | | | ✓ | | |

To get the result from the research instrument of table 2, the researcher applied the formula $p = f/n \times 100\%$. Below are the detailed calculations:

Questionnaire results

1. very feasible : 3 x 5 = 15
2. feasible : 5 x 4 = 20
3. moderately feasible : 1 x 3 = 3

Total score: 15 + 20 + 3 = 38.

Given data:

Score (f) = 38

Total (n) = 45

Formula for Percentage Calculation:

p = (f / n) x 100%

Calculation steps:

p = (38/ 45) x 100%

p = 0.84 x 100%

p = 84%.

The total evaluation score from language experts indicates a percentage of 84%. This result falls within the Very Feasible category. Thus, the iSpring Suite-based learning media developed is classified as Very Feasible in terms of language aspects.

**Table 3**

*Evaluation Results from Subject Matter Experts on iSpring Suite-Based Learning Media*

| No | Aspect Evaluated | Score | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 1 | Clarity of learning objectives | | | | | ✓ |
| 2 | Interactivity | | | | | ✓ |
| 3 | Content description in iSpring Suite media via Android applications | | | | ✓ | |
| 4 | Consistency of media usage instructions | | | | ✓ | |
| 5 | Ease of understanding | | | | ✓ | |
| 6 | Clarity of pronunciation in iSpring Suite media via Android applications | | | | ✓ | |
| 7 | Language suitability for target users in iSpring Suite media via Android applications | | | | ✓ | |
| 8 | Availability of answers in the media | | | | ✓ | |
| 9 | Inclusion of practice exercises | | | | | ✓ |
| 10 | Alignment of tests or exercises with the material discussed in iSpring Suite media | | | | | ✓ |

To get the result from the research instrument of table 3, the researcher applied the formula $p = f/n \times 100\%$. Below are the detailed calculations:

Questionnaire results

1. very feasible : 4 x 5 = 20
2. feasible : 6 x 4 = 24

Total score: 20 + 24 = 48

Given data:

Score (f) = 48

Total (n) = 50

Formula for Percentage Calculation:

p = (f / n) x 100%

Calculation steps:

p = (48/ 50) x 100%

p = 0.96 x 100%

p = 96%.

The evaluation score from subject matter experts yields a percentage of 96%, which falls within the Very Feasible category. Therefore, the iSpring Suite-based learning media is considered Very Feasible in terms of content and material aspects.

**Table 4**

*Evaluation Results from Media Experts on iSpring Suite-Based Learning Media*

| No | Aspect Evaluated | Score | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 1 | Creativity and innovation in developing learning media | | | | | ✓ |
| 2 | Alignment of image selection with the content in the iSpring Suite-based Android application | | | | ✓ | |
| 3 | Orderliness and consistency of button interface in the iSpring Suite-based Android application | | | | ✓ | |
| 4 | KeselAlignment of font size, type, images, and videos in the iSpring Suite-based Android applicationarasan pemilihan ukuran dan jenis font, gambar, serta video dalam media iSpring Suite melalui aplikasi Android. | | | | ✓ | |
| 5 | Orderliness and consistency of icons and buttons | | | | ✓ | |
| 6 | Harmony of text layout, images, audio, and videos in the iSpring Suite-based Android application | | | | ✓ | |
| 7 | Alignment of background selection in the iSpring Suite-based Android application | | | | ✓ | |
| 8 | Display of the iSpring Suite-based Android application | | | | ✓ | |
| 9 | Presentation of engaging material and quizzes in the iSpring Suite-based Android application | | | | | ✓ |
| 10 | Standards of audio and video in the iSpring Suite-based Android application | | | ✓ | | |
| 11 | Color harmony in the iSpring Suite-based Android application | | | | | ✓ |

To get the result from the research instrument of table 4, the researcher applied the formula $p = f/n \times 100\%$. Below are the detailed calculations:

Questionnaire results

1. very feasible : 2 x 5 = 10
2. feasible : 8 x 4 = 32
3. moderately feasible : 1 x 3 = 3

Total score: 10 + 32 + 3 = 45

Given data:

Score (f) = 45

Total (n) = 55

Formula for Percentage Calculation:

p = (f / n) x 100%

Calculation steps:

p = (45/ 55) x 100%

p = 0.82 x 100%

p = 82%.

The evaluation score from media experts yields a percentage of 82%, which falls within the Very Feasible category. Therefore, the iSpring Suite-based learning media is considered Very Feasible in terms of media design.

Adapun analisis hasil validasi oleh ahli bahasa, materi, dan media menunjukkan hasil yang tertera pada tabel 5 di bawah ini:

**Table 5**

*Analysis of Validation Results by Language, Subject Matter, and Media Experts*

| Aspect | Renge of Scores | | | | | Total |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | |
| | SL | L | CL | TL | STL | |
| **Language** | 3 | 5 | 1 | 0 | 0 | 9 |
| **Material** | 4 | 6 | 0 | 0 | 0 | 10 |
| **Media** | 2 | 8 | 1 | 0 | 0 | 11 |
| **Total** | 9 | 19 | 2 | 0 | 0 | 30 |

*Notes: SL : Very Feasible, L : Feasible, CL : Moderately Feasible, TL : Not Feasible Very Not Feasible*

To obtain the total results of the data in table 5, the researcher applied the formula p= ( Σfxi / Σx ) x 100%. The details of the calculation are as follows

$$p = \frac{f\sum xi}{\sum x} \times 100\%$$

$$P = \frac{(2x3) + (19x4) + (9x5)\ x\ 100\%}{30x5}$$

$$p = \frac{6 + 76 + 45\ x\ 100\%}{150}$$

$$p = \frac{129\ x\ 100\%}{150}$$

P = 86%.

The evaluation results from the three experts showed a score of 86%. This variable can be classified into the Highly Feasible category. Thus, the iSpring Suite-based learning media developed is categorized as highly feasible for using based on assessments from all three aspects.

Based on the evaluation conducted, the language expert provided an average score of 84%, indicating that the media is highly feasible in terms of language use. This reflects that the learning materials are designed with clear and easily understood language for students. The evaluation results from the content expert showed a score of 96%, indicating that all materials presented in the learning media have met curriculum standards and students' learning needs. This assessment demonstrates that the content not only aligns with the learning objectives but also succeeds in engaging students in learning Arabic vocabulary. Furthermore, the media expert assigned a score of 82%, indicating that the media design meets the criteria for being well-structured and appealing, effectively enhancing student engagement during the learning process.

Finally, during the dissemination phase, the learning media was distributed to students for trial testing. The product trial was conducted at MI Terpadu Al Ishlah, Gorontalo,

involving 51 fifth-grade students as research participants. The trial setting included a pretest to measure the students' baseline Arabic proficiency before using the learning media, followed by a posttest to assess the improvement in students' vocabulary mastery after utilizing the learning media. Based on the results, the students' average pretest score was 28.27, which increased to 39.86 in the posttest. This improvement indicates that the Android-based learning media developed is not only theoretically feasible but also practically effective in enhancing students' Arabic language skills.

After obtaining the pretest and posttest data, statistical analysis was conducted to test the hypothesis. The statistical test results can be seen in Table 6.

**Tabel 6**

Normality Test Result

**Hypothesis Test Summary**

| | Null Hypothesis | Test | Sig. | Decision |
|---|---|---|---|---|
| **1** | The median of differences between Pretest and Posttest equals 0. | Related-Samples Wilcoxon Signed Rank Test | .000 | Reject the null hypothesis. |

Asymptotic significances are displayed. The significance level is .050.

Based on Table 8, the explanation is as follows:

Normality Tes

Before conducting hypothesis testing, a normality test was performed to determine whether the data were normally distributed. The results of the normality test indicated that the data were not normally distributed, failing to meet the assumptions of parametric tests.

Selection of Hypothesis Testing Metho

Since the data were not normally distributed, a non-parametric hypothesis test was chosen. In this case, the researcher opted for the Related-Samples Wilcoxon Signed Rank Test. This test is used to compare two related groups: students' Arabic vocabulary mastery scores before and after using the iSpring Suite learning media.

Hypothesis Test Results

- Null Hypothesis ($H_0$): The median of differences between the scores before using the media and after using the media equals 0.
- The significance value obtained was 0.000, which is smaller than the predetermined significance level of 0.05.
- Decision: Reject the null hypothesis.

After administering the pre-test and post-test to 51 students, the test results were processed and analyzed to assess the effectiveness of using Android-based learning media. Based on descriptive analysis, the average pre-test score was 28.27 (63%). Meanwhile, the average post-test score increased to 39.86 (96%). Overall, the descriptive results showed an increase in scores from the pre-test to the post-test, with a more concentrated score distribution in the post-test. This indicates that the intervention provided in this study was effective in improving participants' scores.

The results of the pre-test and post-test demonstrate that the use of iSpring Suite learning media is significantly effective in enhancing students' Arabic vocabulary mastery. These findings align with the research objective: to develop effective iSpring Suite learning media for improving students' Arabic vocabulary mastery.

## Discussion

The research results indicate that the use of iSpring Suite-based learning media significantly improves Arabic vocabulary mastery among fifth-grade students at MI Terpadu Al Ishlah, Gorontalo. This conclusion is supported by data from pre-tests and post-tests conducted on 51 students. The average pre-test score before using the media was 28.27, indicating a low level of vocabulary mastery. After the media's implementation, the post-test score increased to 39.86, reflecting a significant improvement in students' vocabulary mastery.

This data was collected through systematic methods, including observations, interviews with teachers, and feedback questionnaires from students after using the media. The evaluation was conducted using a Likert scale to assess various aspects, including the feasibility of content, media, and language.

Validation from language experts yielded a score of 84%, indicating that the language used in the learning media is clear and easy to understand. Meanwhile, the evaluation by content experts reached 96%, signifying that the presented material aligns with the curriculum and effectively engages students. Validation by media experts also showed a score of 82%, demonstrating that the media's design meets good criteria and is visually appealing, thereby enhancing student engagement in the learning process.

This study aligns with previous research stating that interactive media can improve students' motivation and learning outcomes in vocabulary mastery. By using iSpring Suite, students do not merely learn passively but are actively engaged through features such as quizzes and simulations, allowing them to evaluate their understanding in real-time.

Overall, the findings of this research demonstrate that the development of innovative and interactive learning media, such as iSpring Suite, can provide an effective solution to address the challenges of Arabic vocabulary mastery at the elementary school level. Recommendations for further implementation include training teachers in the use of this media and developing more relevant and contextual content to enhance its effectiveness in improving student learning outcomes.

## Conclusion

This study highlights that the development of learning media based on iSpring Suite effectively enhanced the Arabic vocabulary mastery of fifth-grade students at MI Terpadu Al Ishlah. The creation process followed four key stages: identifying student needs, designing instructional materials, developing interactive content, and conducting product trials. The results indicated an increase in the average pretest score from 28.27 to 39.86 in the posttest, demonstrating the efficacy of this media in supporting vocabulary acquisition.

The findings emphasize the value of incorporating interactive media into language learning to foster greater student motivation and engagement. However, the study is not without limitations, particularly its specific focus on vocabulary, which does not address other language skills. Despite this, the study's novelty lies in the integration of mobile technology into Arabic language instruction, offering a fresh and innovative approach to language education. This contributes meaningfully to the advancement of relevant and impactful learning media in the digital era.

## Declarations

### Author contribution statement

This study was authored by Ibnu Rawandhy N. Hula as the first author, Jabbar Loni as the second author, and Suharia Sarif as the third author. Each author of this article contributed to specific roles in the writing process, ranging from planning and development to the product testing stage.

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### Data availability statement

The data used in this study are fully available and accessible to the public. All data collected through observation, interviews, and questionnaires were meticulously processed to ensure accuracy and validity. We are committed to maintaining transparency in this research so that the results and relevant data can be utilized by other researchers and educational practitioners.

### Declaration of interests statement

We would also like to emphasize our deep interest in the development of interactive learning media within the context of Arabic language education. This study aims to make a significant contribution to enhancing students' vocabulary mastery by utilizing technology. It is hoped that the findings of this research will not only serve as a reference for future studies but also be practically implemented in classroom learning.

### Additional information

Additionally, we encourage collaboration among researchers, educators, and other education practitioners to leverage interactive learning media to enhance the effectiveness of language learning. We are open to discussions and exchanges of ideas regarding innovations in Arabic language teaching. Further information about this study can be found in our publications, and we are prepared to conduct presentations or workshops to discuss the findings and implications of this research.

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