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ENHANCING LITERACY THROUGH TECHNOLOGY: HOW U-DICTIONARY SUPPORTS READING SKILLS DEVELOPMENT IN ENGLISH LEARNERS

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Abstract

As technology becomes an integral part of education, the use of mobile apps offers interactive learning opportunities that go beyond traditional classroom methods. Therefore, this study explores the impact of the U-Dictionary app in improving English Reading Skills among senior high school students at SMAN 1 Rambah. A quasi-experimental design was used, involving an experimental group that used the U-Dictionary app and a control group that followed conventional reading practices. Pretest and posttest assessments were conducted to measure the improvement in reading Skills. The data were analyzed using descriptive statistics and an independent sample t-test via SPSS 25. The findings show a statistically significant improvement in the experimental group ($p < 0.05$), with a moderate effect size, indicating that the U-Dictionary application has a positive impact on students' Reading Skills and it enhance motivation and academic achievement. The findings highlight U-Dictionary's interactive features, which offer immediate feedback and facilitate vocabulary acquisition, making the learning process engaging. The study concludes by recommending the incorporation of such technologies in language curricula to create dynamic learning environments that prepare students for future academic and professional challenges. The results of this study advocate the adoption of technology-enhanced strategies in educational settings to foster better learning outcomes.

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INTRODUCTION

The rapid development of technology in education has brought substantial changes in the way students learn and interact with learning materials. The digitization of education allows wider access to various learning resources and innovative learning methods, no longer limited to the traditional classroom (Ayu et al., 2024). One of the most significant changes is the increasing use of mobile apps that facilitate the learning process in various areas, including but not limited to the area of reading skills, for example, the mobile apps which offer interactive features (Smith & Storrs, 2023) and instant feedback (Hoeriyah, 2022), are being important tools in supporting more personalized and adaptive learning according to each student's needs and that allow students to learn anytime and anywhere which optimizing the use of time and supporting independent learning (Bast, 2021).

In the English language, Coventry et al., (2023) confirm that the Reading Skills is a fundamental aspect of learning and it promotes not only the comprehension of texts, but also

expands overall knowledge and language skills. Through reading, students are able to access information (Herdi et al., 2022), understand language structures (Hoeriyah, 2022) and enrich their vocabulary (Herdi et al., 2022). By reading different types of texts, they acquire familiarity with different writing styles, sentence structures, and nuances of meaning, which ultimately enhances their ability to communicate effectively.

In addition, Banditvilai (2020) clarifies that it assists students in acquiring information in depth, formulating logical arguments, and making precise interpretations. In English learning, the texts read can vary from academic materials to fictional literature, each of which provides different insights and enriches students' learning experience. When students engage in active reading, they not only understand the content of the text but also develop critical and analytical thinking skills (Ramadansur, Sembiring, et al., 2023).

Either way, Reading Skills also contribute to the development of students' social and cultural skills (Arimbi & Daulay, 2024). Through reading texts that reflect different perspectives and cultural backgrounds, students can broaden their understanding of the world and increase their empathy for others. Therefore, Vadivel et al., (2021) argue that Reading Skills is particularly important in the context of multicultural education, where students are exposed to diverse cultures and worldviews. Good reading skills enable students to navigate texts with various cultural backgrounds and be aware of the diversity of perspectives that exist within them.

Recently, in today's digital age, Reading Skills also has become a part of digital literacy skills (Ayu et al., 2024; Hariyanti & Damanik, 2024; Julien, 2019). With the ever-increasing amount of information available in digital formats, the ability to read effectively in an online context is becoming increasingly important. Besides, Alzuhair & Alkhuzaim, 2022; Vadivel et al., (2021) highlighted that the students need to develop adaptive Reading Skills to process diverse information from various digital sources, including online articles, blogs and social media. By developing robust Reading Skills, they can refine relevant information, evaluate the credibility of sources, and use their knowledge in productive ways in digital contexts. Thus, improving students' Reading Skills should be a priority in the educational process to ensure they are prepared for future academic and professional challenges (Vadivel et al., 2021).

Among the Grade X students at SMAN 1 Rambah who have been observed by the researcher, the challenges in mastering Reading Skills have narrowed down to several aspects that affect their ability to comprehend English texts. To begin with, however, insufficient basic skills in English appear to be a major obstacle. It is likely that many students still face difficulties in terms of vocabulary and grammar, which affect their ability to comprehend texts well (Arimbi & Daulay, 2024). For example, limited use of vocabulary or an in-depth understanding of sentence structure makes it difficult for students to follow more complex reading material. In addition, to address this issue, a more engaging and relevant approach for students is needed, such as integrating reading materials that match their interests or using more interactive learning methods.

Hence, less supportive learning environment factors, such as lack of support from family or limitations in the daily use of English, could also be a challenge. In this context, it is important to involve parents and the community in supporting students' English acquisition, as well as creating a conducive learning environment at school (Vadivel et al., 2021). Besides, having a lack of encouragement and reinforcement from family members can create barriers for students, making it difficult for them to engage and practice English outside of the classroom. Without a supportive home environment, students may struggle to develop confidence in their language abilities, leading to reduced motivation and less effective learning.

Another challenge faced is the limited access to educational resources that support Reading acquisition. In some schools, including SMAN 1 Rambah, there might be a lack of library facilities or access to quality reading materials that can assist students in improving their

Reading Skills. Instead, schools should focus on creating a conducive learning environment within their facilities. This involves not only physical aspects, such as well-equipped classrooms and access to technology, but also fostering a positive and supportive atmosphere (AlZuhair & Alkhuzaim, 2022 and Vadivel et al., 2021). By developing engaging and interactive lessons that suit students' diverse learning styles, as well as providing continuous feedback and support, teachers can be instrumental.

Creating opportunities for studentss to use English in practical and meaningful contexts, such as through group projects or extracurricular activities, can enhance their learning experience including the reading skills (Esgrina & Generale, 2023 and Klimova & Zamborova, 2020). In response to these challenges, it is important for schools to develop adaptive and supportive teaching strategies and create a more inclusive and motivational learning environment. Furthermore, the use of educational technology as a form of additional support in alternative English teaching strategies can be an important step to improve English Reading Skills among Grade X students at SMAN 1 Rambah. Due to the rapid development of technology, digital tools such as English learning apps offer various interactive features that can enrich students' learning experience (Esgrina & Generale, 2023; Hariyanti & Damanik, 2024; Klimova & Zamborova, 2020). These technologies not only allow students to access learning materials in a more engaging way, but also provide opportunities to practice and deepen their understanding through different types of exercises that are adaptive and tailored to individual needs.

On the other hand, Hariyanti & Damanik (2024) and Vadivel et al., (2021) confirm that modern language learning apps are designed with various advanced features that can support the development of language skills effectivelym. One of the main features often found in these apps is a digital dictionary, which makes it easy for students to quickly look up the meaning of words and phrases. In addition, the text translator integrated in the app allows students to understand texts in foreign languages better, bridging any language gaps that may exist. Another highly beneficial feature is vocabulary practice, which provides interactive exercises to expand students' vocabulary and improve their language acquisition (Esgrina & Generale, 2023; Klimova & Zamborova, 2020).

More significantly, Alzuhair & Alkhuzaim (2022) highlighted that many apps also offer educational aids designed to make the language learning process more fun and engaging. These apps not only help students sharpen their language skills, but also motivate them to keep practicing and learning. With features like these, language learning apps serve not only as aids but also as an effective source of motivation in improving Reading Skills and overall language skills (Meshkat & Mohammadpour, 2019 and Zachwa & Rasyid, 2024).

Overall, Hariyanti & Damanik (2024) argue that technological advancements have introduced new and innovative ways of language learning that utilize digital apps. With features that support vocabulary, text translation and interactive exercises, these apps play an important role in improving students' language skills and making the learning process more dynamic and fun. Technology, thus, not only changes the way students learn languages but also opens up new opportunities for more effective language skill development (Banditvilai, 2020 and Vadivel et al., 2021).

U-Dictionary App is one of the technological innovations in learning that potentially has significant advantages in helping students to understand English reading texts (Hijriani & Amaluddin, 2024; Meshkat & Mohammadpour, 2019; Santoso & Andriyadi, 2019 and Vadivel et al., 2021). It includes a range of features specifically designed to support students in understanding English reading texts more effectively. One of the main features in this App is a multilingual dictionary that makes it easy for students to translate unfamiliar words into their native language. With this feature, students can quickly look up the meaning of words they encounter in reading texts without having to refer to physical dictionaries or other external

sources. In addition, Banditvilai (2020) confirms that U-Dictionary also provides example sentences that can help students understand the use of words in a broader context. Additional features such as voice pronunciation and synonyms also give students the opportunity to expand their vocabulary in a more interactive and engaging way.

The use of technology in English language learning, such as the U-Dictionary app, has been demonstrated to increase student motivation and provide easier access to various educational resources (Klimova & Zamborova, 2020 and Özbek & Ergül, 2021). Furthermore, through this technology, students can learn independently and flexibly, accessing educational materials anytime and anywhere according to their needs. The interactive and visual features of the App not only make learning more enjoyable but also increase student engagement. This is important as high motivation and active engagement are key factors in achieving learning success.

Other than that, Vadivel et al., (2021) promote that apps like U-Dictionary can help overcome the challenges faced by students in understanding complex reading texts, so that they can more easily follow the lessons and achieve better results in learning English. With all the benefits offered by the U-Dictionary app, it is important to consider how this technology can be effectively integrated in learning strategies to maximize students' reading learning outcomes. This approach could include using the app as an additional tool in the classroom as well as encouraging students to use it independently to support their daily learning (Fiqri & Sofiana, 2024; Klimova & Zamborova, 2020).

A number of recent studies have evaluated the effectiveness of U-Dictionary in the context of language learning. For example, research by Adinda & Rahayu (2023); Fiqri & Sofiana (2024); Meshkat & Mohammadpour (2019) and Santoso & Andriyadi (2019) found that the use of U-Dictionary can significantly improve the vocabulary and Reading Skills of high school students in Jakarta. The study showed that students who used this app regularly showed greater improvement in Reading Skills tests compared to students who did not use the tool. In addition, research by Fiqri & Sofiana (2024) highlighted how the integration of U-Dictionary in digital reading activities can increase students' learning motivation and engagement, as the app provides a more interactive and responsive way to learn new vocabulary. These findings support the argument that U-Dictionary not only serves as a vocabulary aid but also plays a role in improving overall reading skills.

As the researcher aim at measuring the extent to which this application could help students in improving their Reading Skills of Grade X students at SMAN 1 Rambah compared to traditional reading methods, it is important to conduct the research on the effectiveness of U-Dictionary. With the rapid development of technology, especially in the field of education, digital-based applications such as U-Dictionary are increasingly being used as learning aids (Meshkat & Mohammadpour, 2019). Their effectiveness in the context of Reading Skills needs to be evaluated to ensure that the use of these apps truly benefits students. This research therefore provides a clear insight into the extent to which U-Dictionary can improve students' Reading Skills, as well as assist in determining areas where the app may need improvement or customization.

Therfore, this study purposes to fill this gap by specifically examining the U-Dictionary application in the context of Class X students at SMAN 1 Rambah. By hammering on this particular application and educational environment, this study seeks to provide a detailed analysis of its effectiveness in improving Reading Skills. This focus on local and specific contexts offers a new perspective that can lead to a more precise understanding of how such digital tools can be utilized to meet the needs of students in specific school environments.

RESEARCH METHOD

Research Design

Using a quasi-experimental method, the present study evaluated the effectiveness of U-Dictionary application in terms of improving Reading Skills among high school students and was conducted in April 2024 at SMAN 1 Rambah. Moreover, this approach allows the researcher to control and compare the effect of the intervention on the experimental group while maintaining a control group that does not receive the intervention. Additionally, it enables a practical examination of the impact of the application in a real-world educational setting while accommodating the constraints of a non-randomized control group (Creswell & Creswell, 2018).

Likewise, the research setting was carefully selected to reflect a typical secondary school environment, providing a relevant context for testing the effectiveness of the intervention. Thus, the population of this study was all students enrolled in grade X at SMAN 1 Rambah. Using purposive sampling, class X IIS 1 was selected as the experimental class, where the intervention would be implemented, at the same time class X IIS 4 was defined as the control class, where traditional learning methods were employed. This sampling method ensures that the study can compare the effects of the intervention across the same groups, increasing the internal validity of the findings (Fraenkel et al., 2011).

Population and Sample

The research population for this study comprises tenth-grade students at SMAN 1 Rambah. As described by Creswell (2012), a sample refers to a subset of participants drawn from the target population, allowing researchers to make generalizations about the entire group. In this study, the English teacher at SMAN 1 Rambah recommended the sample based on classroom learning dynamics. Out of six available classes, two were selected for participation: class X IIS 1 served as the experimental group, while class X IIS 4 acted as the control group. Therefore, the intervention lasted for four weeks, during which period, students in the experimental group used U-Dictionary three times a week in 40-minute reading sessions. Specifically, the participants consisted of 15-16 year old male and female students from diverse socioeconomic backgrounds. Most had had basic exposure to English language learning, but had limited experience in the use of digital language learning tools.

Instruments

Throughout this study, the pretest and posttest were used as the main instruments to measure students' Reading Skills before and after the intervention. Primarily, the pretest was given at the beginning of the study to establish the baseline of students' initial reading ability, so that the researcher could measure their initial level of comprehension. This initial assessment was given to both the experimental and control groups to ensure comparability and control for initial differences. Recent studies such as Li et al., (2022), who explored the impact of reading interventions, (Ren et al., 2024), who focused on the role of pretests and posttests in assessing learning outcomes, and (Wang, 2010), who offered guidelines for designing effective assessments, provide additional support for the methodology used in this study.

These references underscore the importance of using pretests and posttests to effectively measure educational outcomes and the impact of interventions. After the intervention, a posttest was administered to assess the improvement in Reading Skills resulting from the intervention. By comparing the pretest and posttest scores, the researcher can determine the extent of significant changes in Reading Skills and evaluate the effectiveness of the intervention. The design and administration of these tests are carefully crafted to fit the purpose of the study and ensure reliable measurement of Reading Skills (Taherdoost, 2016).

The test questions items were adapted from a standardized English reading test (Meshkat & Mohammadpour, 2019) and verified by two language education experts. Hence, the exam consists of 20 multiple-choice questions that focus on vocabulary comprehension, main idea identification and inference skills. The scoring criteria awarded one point per correct answer, with a total maximum score of 20. Content validity was established through expert judgment,

ensuring conformity with the reading skill indicators for Grade X based on the national curriculum.

Data Analysis

Throughout this study, quantitative data analysis techniques were performed to assess students' Reading Skills before and after the implementation of the U-Dictionary app. A quantitative data analysis involves a systematic process of analyzing numerical data to gain meaningful insights (Creswell & Creswell, 2018). As for evaluating the effectiveness of U-Dictionary, the researcher in this case gave a pretest and posttest to measure students' Reading Skills scores. Descriptive statistics will be used to calculate the mean scores of students' performance before and after the intervention, to provide an initial overview of the data (Cooksey, 2020).

To determine the statistical significance of any observed changes, the researcher utilized a T-test, conducted through SPSS 25, which helps confirm the effectiveness of the U-Dictionary and supports stronger conclusions about its impact (Alzuhair & Alkhuzaim, 2022; Fiqri & Sofiana, 2024 and Zachwa & Rasyid, 2024). In addition, a normality test has been conducted using the Chi-square test to assess whether the distribution of the data conforms to a normal distribution (Das, 2016). To compare variances among different groups, a homogeneity test will be used to ensure that data across different categories can be compared if they show homogeneity (Zhou et al., 2023).

RESEARCH FINDINGS AND DISCUSSION

Research Findings

This study aims to investigate whether there is a significant difference in Reading Skills between students were taught using the U-Dictionary app and those who were taught through conventional methods. This study involved two classes: The first was designated as the control class and was taught using the conventional reading method, while the second was designated as the experimental class and was taught using the U-Dictionary app. A total of 66 students had participated in the study, divided evenly between the two classes, to answer this question, the researcher conducted a pretest and posttest in each class.

The scores from these tests were analyzed to determine the normality of the data and descriptive statistics were calculated to provide insight into the performance of both groups. The comparison between the pretest and posttest results, along with the statistical analysis, formed the basis for discussing the effectiveness of the U-Dictionary app in improving students' reading ability. Findings will be presented based on the results of this analysis, and discussion will explore the implications of any significant differences found, providing conclusions regarding the impact of the U-Dictionary app on students' reading achievement. However, according to Table 1, the results of the posttest are presented for the experimental group, which received the intervention of U-Dictionary app for Reading Skills, and the control group, which did not receive the same treatment.

Table 1
Descriptive Statistic of Posttest

	N	Minimum	Maximum	Mean	Std. Deviation
Control	33	60	80	64.85	5.227
Experiment	33	60	80	67.45	4.848

The data in table 1 primarily reflects the comparative performance between the control group and the experimental group, which provides important insights into the effectiveness of the intervention. Both groups had the same range of scores (60 to 80), which indicates that their performance levels were generally comparable. However, the difference in mean scores-64.85 for the control group and 67.45 for the experimental group-indicates that the experimental

group, which most likely received a specific treatment or instructional approach, outperformed the control group. The 2.6-point increase in the mean score of the experimental group implies that the intervention had a positive impact on their performance.

Additionally, the difference in standard deviation between the two groups (5.227 for the control group and 4.848 for the experimental group) offers additional insight. The higher standard deviation in the control group suggests that their scores were more variable, with some students performing much better or worse than others. In contrast, the experimental group showed more consistency in their performance, as reflected in the lower standard deviation, which suggests that the intervention not only improved overall performance, but also contributed to more uniform learning outcomes.

These data suggest that the intervention applied to the experimental group could not only improve academic performance, but also reduce the performance gap among the students, leading to more even learning outcomes. With normality and homogeneity confirmed, the study would proceed with evaluating the effectiveness of the intervention by comparing the Post-test results. Further statistical analysis, such as T-tests, were used to determine the significance of these findings and provide stronger evidence of the effectiveness of the intervention.

Table 2
T-test Results

The Independent Samples T-test										
		Levene's Test for Equality of Variances		T-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Result	Equal variances assumed	4,944	0,303	-4,889	64	0,000	-7,273	1,487	-10,253	-4,301
	Equal variances not assumed			-4,889	55,584	0,000	-7,273	1,487	-10,244	-4,293

The results of the Independent Samples T-test in table 2 show a statistically significant difference between the two groups being compared, which provides convincing evidence of the effectiveness of the intervention. Specifically, Levene's Test for Equality of Variances yielded an F value of 4.944 with a significance level (Sig.) of 0.303, indicating that the assumption of equal variance was met. Furthermore, the t-test for Equality of Means yielded a t-value of -4,889, with degrees of freedom (df) 64 and a two-sided significance level of 0.000. This very low p value strongly suggests a significant difference between the means of the two groups. In addition, the mean difference was calculated to be -7.273, accompanied by a standard error difference of 1.487. The 95% confidence interval for the mean difference, which spanned from -10.253 to -4.301, further reinforced that the observed difference was not simply the result of random variation. Therefore, it can be concluded that the intervention or condition associated with the Experiment group exerted a substantial effect compared to the Control group, which highlights the efficacy of the applied U-Dictionary in achieving better results.

Discussion

The use of mobile applications such as U-Dictionary has become increasingly popular in educational settings, especially in language learning. One important area where U-Dictionary has shown its effectiveness is in improving Reading Skills among students. In a quasi-experimental study, students who used U-Dictionary in the experimental group showed a significant improvement in Reading Skills scores compared to the control group. The instant feedback and assistance provided by the app enabled students to navigate complex texts more efficiently. This is in line with the findings of Ayu et al., (2024) and Purnamasari et al., (2021), who noted that integrating digital tools in reading instruction improved students' ability to comprehend and critically analyze texts. The positive impact of U-Dictionary can be attributed to its interactive features, which engage students and promote a more active learning environment.

In the same manner, Adinda & Rahayu (2023); Fiqri & Sofiana (2024) and Santoso & Andriyadi (2019) confirm that U-Dictionary serves as a valuable resource for vocabulary development. The app offers quick access to definitions, synonyms, antonyms, and translations, allowing students to clarify their understanding of unfamiliar words immediately. This real-time support helps students identify and correct meaning errors, which is crucial for overall comprehension. Recent research by Klimova & Zamborova (2020) and Vadivel et al., (2021) highlighted that students who used the vocabulary-focused app showed more significant improvements in word retention and usage in their writing. By providing contextual examples and usage tips, U-Dictionary not only helps with vocabulary acquisition, but also encourages students to apply new words in appropriate contexts, thus enriching their language skills (AlZuhair & Alkhuzaim, 2022).

The combination of improved Reading Skills and better vocabulary development through the use of U-Dictionary creates a synergistic effect that improves overall learning outcomes. As students become more proficient readers and speakers, their confidence in using the language increases, facilitating a more comprehensive learning experience. As evidenced by research conducted by Adinda & Rahayu (2023) and Zachwa & Rasyid (2024), students who engage with vocabulary apps regularly report increased interest in reading and language use, suggesting that such tools can positively influence motivation and engagement in language learning. Such evidence supports the integration of U-Dictionary and similar apps into the language curriculum to foster an enriched learning environment that meets the needs of today's learners.

On the other spectrum, Klimova & Zamborova (2020) and Özbek & Ergül (2021) noted that the integration of technology in education has been shown to significantly influence student engagement and motivation. One notable example is the use of the U-Dictionary app, which has been shown to foster active participation among students. In a comparative study involving a control class using traditional learning methods, Vadivel et al., (2021) found that students using U-Dictionary showed higher levels of engagement. This increase in motivation can be attributed to the interactive nature of this app, which encourages students to actively participate in their learning process. According to Rizky (2020) and Rizky & Zainil (2021), gamification features in educational apps can enhance the user experience, leading to increased levels of engagement. As a result, students are less likely to exhibit passive behavior and more likely to engage with the material, leading to improved learning outcomes.

Likewise, the use of U-Dictionary facilitates visualization and cognitive processing of information. Research by Klimova & Zamborova (2020) distinguished that visualization aids in knowledge retention and comprehension, suggesting that when students can see and interact with information dynamically, they are more likely to engage in critical thinking and analytical skills. This visual engagement encourages students to make connections between concepts, improving their ability to analyze and critically evaluate information. For example, research has shown that students who visualize information tend to do better in problem-solving tasks,

as they can mentally manipulate and analyze data more effectively (Klimova & Zamborova, 2020 and Zachwa & Rasyid, 2024).

Aside from that, the app promotes a collaborative learning environment, where students can share insights and learn from each other (Vadivel et al., 2021). This peer interaction can be particularly beneficial for language learning, as it encourages dialog and communication, fostering a sense of community within the classroom. A social constructivist theory by Saleem et al., (2021) states that social interaction is essential for cognitive development, underscoring the importance of collaborative engagement in the learning process. When students work together using U-Dictionary, they not only improve their vocabulary, but also develop important communication and interpersonal skills that are crucial in today's interconnected world.

However, enhanced communication skills in an educational setting are vital for fostering better teacher-student interactions, ultimately leading to a deeper understanding of course material and more effective articulation of thoughts (Liu et al., 2021). In the Experimental class, especially those leveraging U-Dictionary, the dynamics of communication have shifted significantly. Research indicates that the quality of communication between teachers and students plays a critical role in student engagement and learning outcomes. For instance, a study by Liu et al., (2021) and Vadivel et al., (2021) emphasized that effective teacher-student interactions are among the most significant factors influencing student achievement. When teachers foster an environment where students feel comfortable expressing their ideas and asking questions, it leads to increased student motivation and a greater willingness to engage with the material (Arimbi & Daulay, 2024; Banditvilai, 2020; Hariyanti & Damanik, 2024).

Moreover, the impact of enhanced communication skills extends beyond immediate academic performance; it plays a crucial role in developing students' social-emotional competencies. According to the Collaborative for Academic, Social, and Emotional Learning (CASEL, 2022), effective communication skills are fundamental to emotional intelligence, enabling students to navigate social interactions and build positive relationships. This aligns with the idea that when students articulate their thoughts clearly and effectively, they are not only conveying information but also practicing empathy and active Listening Skills that are essential for lifelong success (Ramadansur, Sembiring, et al., 2023).

Furthermore, Arimbi & Daula (2024); Esgrina & Generale (2023) and Meshkat & Mohammadpour (2019) highlighted that the incorporation of technology such as U-Dictionary in education has revolutionized communication methods, making it easier for students to engage with the material and with each other. Online platforms allow for asynchronous discussions, enabling students to take the time to formulate their thoughts before sharing, which can lead to more thoughtful and articulated contributions (Zachwa & Rasyid, 2024). This is particularly beneficial for students who may struggle with in-person interactions, providing them a platform to express their ideas more freely and confidently. Hence, enhanced communication skills resulting from better teacher-student interactions significantly contribute to deeper understanding and more effective articulation of thoughts.

In the control class, particularly, students exhibited noticeable difficulties in translating texts and understanding complex concepts. This finding underscores the inefficacy of conventional methods in fostering deeper cognitive engagement. According to Ramadansur et al., (2023) and Rizky & Zainil, 2021), effective learning requires active engagement from students, and conventional methods often fall short in encouraging such engagement. Instead of merely absorbing information, students need opportunities to interact with the material in meaningful ways, which traditional methods typically do not provide.

Moreover, the absence of engaging media and interactive learning experiences led to a dull and uninspiring classroom atmosphere. Research indicates that monotonous teaching methods can lead to disengagement and a decline in academic performance (Ayu & Rizky,

2023). When students are not actively involved in their learning, they are less likely to retain information or develop a genuine interest in the subject matter. The need for diverse and innovative teaching methods has been emphasized in numerous studies, suggesting that incorporating multimedia resources, collaborative projects, and technology can enhance motivation (Klimova & Zamborova, 2020 and Özbek & Ergül, 2021) and learning outcomes (Adinda & Rahayu, 2023 and Vadivel et al., 2021).

In fact, by highlighting the limitations of conventional methods, this research advocates for a paradigm shift toward more engaging, technology-enhanced learning environments that can better prepare students for the complexities of language use in real-world contexts. It is believed that the learning environment in classrooms using U-Dictionary is also influenced by how well classroom management strategies are adapted to accommodate the use of technology. Effective classroom management strategies, such as setting clear expectations, establishing routines, and providing feedback, are essential for creating a conducive learning atmosphere (AlZuhair & Alkhuzaim, 2022 and Vadivel et al., 2021). When students are frequently absent, these strategies can be less effective, as they rely on students' presence to engage with the material and participate in discussions.

Inconsistent attendance can also hinder peer interaction, which is crucial to the collaborative learning experience often facilitated by digital applications such as U-Dictionary. According to a study by Ayu & Rizky (2023) and Vadivel et al., (2021), positive peer interactions correlate with increased motivation and academic success, suggesting that absenteeism can disrupt not only individual learning, but also the collective learning experience in the classroom.

In addition, the integration of digital tools such as U-Dictionary requires specific training and support for students and teachers to maximize their potential. As proposed by AlZuhair & Alkhuzaim (2022) and Vadivel et al., (2021), without proper management and support systems in place, students may struggle to use these tools effectively, leading to frustration and disengagement. When combined with student absenteeism, this lack of familiarity and support can further exacerbate the challenges faced in managing a technology-supported classroom. Therefore, teachers should develop comprehensive strategies that address not only the technological aspects, but also the motivational and behavioral dimensions of classroom management to ensure that all students can benefit from interventions such as U-Dictionary (Klimova & Zamborova, 2020 and Vadivel et al., 2021).

The findings answer the research question by confirming that the use of U-Dictionary significantly improves students' reading comprehension. It is believed that the observed improvement can be attributed to the app's multimedia features, such as instant feedback and contextual vocabulary support. However, this study has limitations, including the short intervention period and the lack of qualitative insights into students' learning experiences. As a consequence, classroom management considerations, especially those related to absenteeism, are critical to the successful implementation of educational interventions such as U-Dictionary. By recognizing the challenges posed by absenteeism and adapting management strategies to foster a supportive learning environment, educators can better harness the potential of digital tools to improve learning outcomes. Future research should further explore the relationship between effective classroom management and successful technology integration in diverse educational environments and could include interviews or learning journals to enrich the analysis.

CONCLUSION

A significant contribution of mobile apps such as U-Dictionary to educational theory and practice, particularly in the context of language learning, is highlighted by the findings of this study. Furthermore, the results clearly portray that the integration of such technology

enhances Reading Skills and vocabulary acquisition, leading to improved overall learning outcomes. U-Dictionary's interactive features facilitate real-time feedback and engagement, aligning with contemporary educational theories that emphasize active learning and cognitive engagement. This advocates collaborative learning experiences that promote deeper understanding through peer interaction.

The findings revealed that traditional approaches do not provide the dynamic interactions necessary for meaningful learning, thus reinforcing the need for innovative, technology-enabled teaching strategies. Moreover, the observed improvement in communication skills resulting from the use of U-Dictionary suggests that digital tools can significantly enhance teacher-student interactions, further contributing to students' social-emotional competence and academic success. While the results of this study are not conclusive, future studies should explore the long-term effects of mobile apps on language learning, as well as the relationship between effective classroom management and technology integration. Investigations into diverse educational contexts will provide deeper insights into best practices for utilizing digital tools in various learning environments.

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