

Analysis of User Reviews of Online Learning Applications

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Abstract

This study aims to analyze user reviews of Muslim students of the Ruangguru online learning application in Indonesia using word frequency and co-occurrence analysis methods from March 2020 to February 2023. By applying a qualitative approach to extensive review data, this study identifies the factors that influence satisfaction and user preferences in the online learning process. The results show that usability, content quality, interactivity, and technical support are important aspects that contribute to the user learning experience of Muslim students. However, there are also challenges experienced by users, such as technical problems and the need for further personalization. These findings provide valuable insights for online learning application developers to improve the quality of their products and support educational needs in Indonesia. This research also suggests conducting a quantitative study to dig deeper into users' subjective experiences.

Keywords: *Online Learning, User Review Analysis, Ruangguru, User Satisfaction, Personalization of Learning*

Abstrak

Penelitian ini bertujuan untuk menganalisis review pengguna pelajar Muslim terhadap aplikasi pembelajaran online Ruangguru di Indonesia menggunakan metode analisis frekuensi kata dan co-occurrence pada bulan Maret 2020 hingga Februari 2023. Dengan menerapkan pendekatan kualitatif pada data review yang luas, penelitian ini mengidentifikasi faktor-faktor yang mempengaruhi kepuasan dan preferensi pengguna dalam proses pembelajaran online. Hasilnya menunjukkan bahwa kegunaan, kualitas konten, interaktivitas, dan dukungan teknis merupakan aspek penting yang berkontribusi terhadap pengalaman belajar pengguna siswa Muslim. Namun, ada juga tantangan yang dialami pengguna, seperti masalah teknis dan perlunya personalisasi lebih lanjut. Temuan ini memberikan wawasan berharga bagi pengembang aplikasi pembelajaran online untuk meningkatkan kualitas produknya dan mendukung kebutuhan pendidikan di Indonesia. Penelitian ini juga menyarankan untuk melakukan studi kuantitatif untuk menggali lebih dalam pengalaman subjektif pengguna.

Keywords: *Pembelajaran online, Analisis Tinjauan Pengguna, Ruangguru, Kepuasan Pengguna, Personalisasi Pembelajaran*

PENDAHULUAN

Online learning, as an educational method, has experienced a significant acceleration in adoption worldwide in response to the COVID-19 pandemic. This is an adaptation to the physical distancing necessary to reduce the spread of the virus, forcing educational institutions to look for alternative solutions in delivering learning materials.

In Indonesia, this phenomenon is also driving educational transformation, with many schools and universities switching to this learning model. Ruangguru, as one of the leading online learning applications in Indonesia, has become one of the main platforms used by students to access learning materials, tutoring and other educational resources during the pandemic (Prillya et al., 2021). Students can easily access this application without having to leave the house, which makes it easier for students (Zimmerman, 2002). With its diverse features, Ruangguru offers rich and accessible educational solutions for students from various socioeconomic backgrounds.

According to Ally (2009), mobile learning can significantly change the delivery of education and training, offering greater flexibility and accessibility for students. Meanwhile, Huang et al. (2020) emphasized the importance of open educational practices and resources during the COVID-19 outbreak, as a way to maintain uninterrupted learning. The quality and scale of high-impact practices in education is also discussed by Kuh & O'Donnell (2015), highlighting the importance of ensuring quality in students' learning experiences. This research aims to evaluate the impact of using Ruangguru on the effectiveness of online learning in Indonesia, with a focus on the period March 2020 to February 2023. Where in the March 2020 period, COVID-19 began to spread in Indonesia, this research also intends to look at changes in student behavior from previously conducted offline learning into online learning, so the data used is data to date. Through this analysis, the research aims to identify how Ruangguru influences students' learning motivation, their engagement in the learning process, and overall learning outcomes, using reviews on the Play Store as one data source. Apart from that, this research also aims to understand the perceptions of students, teachers and parents towards Ruangguru as an educational tool during the pandemic.

The COVID-19 pandemic has triggered significant changes in global educational practices, forcing educational institutions around the world, including in Indonesia, to switch from face-to-face learning to online learning models (Ellis et al., 2020). According to Bao (2020), this change not only tests the capacity of educational technology infrastructure but also requires adjustments from teachers and students in adopting new learning methods. This adaptation process involves developing digital content, adapting teaching strategies to increase student engagement online, and using learning management platforms to facilitate the teaching and learning process. In the Indonesian context, this challenge is exacerbated by variations in access to technological resources and internet connectivity in various regions. This requires online learning solutions that are flexible and accessible to students from various backgrounds. In response to this situation, many educational institutions have begun to implement various online learning platforms to ensure continuity of the teaching and learning process (Hodges et al., 2020). Furthermore, efforts to overcome these obstacles require cross-sector collaboration, involving government, the private sector, the educational community and families. The Indonesian government has taken important steps by launching various initiatives, such as internet quota subsidies for teachers and students, aimed at increasing the accessibility of online learning. These initiatives, along with improving digital

infrastructure and digital literacy among the population, are expected to strengthen the foundation for inclusive and equitable education across the country. Thus, online learning is not only a temporary solution during the pandemic but also an integral part of a resilient and adaptive education system in the future (Bozkurt et al., 2020).

Online learning applications, such as Ruangguru, Zenius, and Quipper, have played an important role in supporting distance learning in Indonesia. The features offered by these apps, including learning videos, interactive exercises, and quizzes, aim to make learning more interesting and interactive for students. According to Marini et al. (2021), the use of online learning applications can increase student learning motivation and enable personalization of learning to suit individual needs. This shows that educational technology has significant potential to improve the quality of online learning in Indonesia. Apart from providing easy access to learning materials, these applications also facilitate interaction between students and teachers through discussion forums and live teaching sessions, which is invaluable in maintaining engagement and interactivity in the learning process. The existence of these supporting features shows the evolution of online learning from simply providing content to a comprehensive learning platform, which supports various aspects of the teaching and learning process.

Recent studies show that students in Indonesia are increasingly interested in using online learning applications, not only as learning aids but also as a medium for developing new skills that are relevant to the needs of the 21st century. A study by Hidayat et al. (2020) revealed that the use of online learning applications has been significant in increasing students' learning independence, where they become more proactive in searching for and utilizing learning resources available online. This marks a shift in the learning paradigm from a teacher-centered to a learner-centered model, where students have more control over their learning process. These developments, while providing many benefits, also raise new challenges, such as the need for effective guidance from teachers to ensure students can utilize these learning resources efficiently. Therefore, training and continuous professional development for teachers in integrating learning technology into their teaching practice is crucial. Thus, online learning applications are not only changing the way students learn, but also the way teachers teach, marking a holistic transformation in the education system.

METODE

The increasing interest in online learning in Indonesia, especially during the COVID-19 pandemic, emphasizes the need to explore how online learning applications such as Ruangguru are perceived through the lens of user reviews (Ma et al., 2013). Recognizing the important role that online reviews play in various sectors, including education, this study focuses on understanding the impact of these reviews on Ruangguru's online learning application. In this context, online reviews provide valuable insight into users' experiences and levels of satisfaction, thereby serving as a proxy for the reputation and quality of learning services provided by these applications, an

example of an online review can be seen in Figure 1.

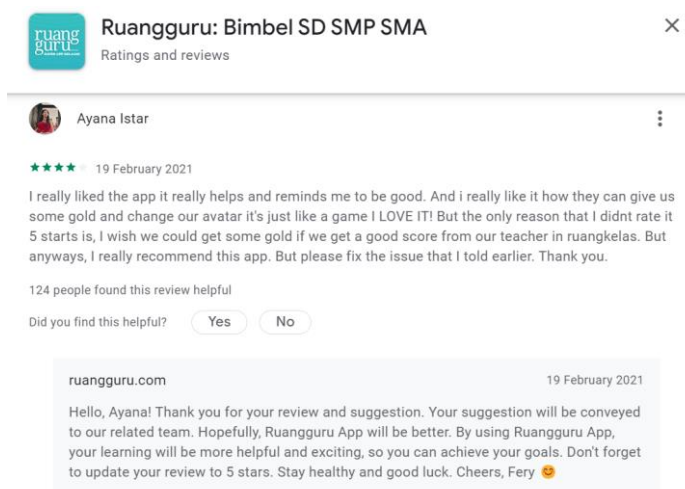


Figure 1. Example of a review from the Play Store

To capture the nuances of these perceptions, this research systematically collected and analyzed user reviews from the Google Play Store for the Ruangguru app. This research covers the period from March 2020 to February 2023 with approximately 2000 data, which covers the time span when online learning became very relevant due to the COVID-19 pandemic (Hidayat et al., 2020). This study analyzed reviews that included both ratings and textual comments, ensuring a rich dataset to examine. Reviews that did not have textual comments or did not contain relevant information were excluded to maintain the relevance and quality of the analyzed data.

Data extraction was performed using advanced web scraping tools, which facilitated the collection of reviews from the digital environment. This method is recognized for its effectiveness in studying user behavior and experience through online feedback. Data extraction was performed using Outscraper, a sophisticated web crawling and data processing tool, which facilitates the collection of reviews from digital environments—a method that is increasingly recognized for its effectiveness in studying human behavior and user experience through online feedback (Zhao et al., 2019; Zhong et al. al., 2019). Next, the collected data underwent rigorous analysis using KH Coder, a software tool designed for quantitative text analysis. KH Coder allows the identification and visualization of networks of words that frequently appear together, revealing underlying patterns and themes in review content which can be seen in Figure 2 (Higuchi, 2016).

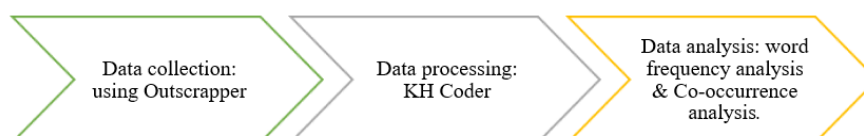


Figure 2. Research process

This analytical approach allows for a detailed exploration of the sentiments, priorities, and concerns expressed by Ruangguru users, providing a deeper understanding of how this online learning application is perceived and evaluated through online reviews.

HASIL DAN PEMBAHASAN

Word frequency analysis is a method in qualitative research that is used to understand themes or patterns that appear in text (Ma et al., 2013). In this context, the word frequency of Ruangguru app reviews indicates the most prominent elements in users' perceptions of the app. The results of this analysis can be seen further in Table 1.

Table 1. Word frequency analysis

No	Words	TF	No	Words	TF
1	Study	261	26	Teacher	38
2	Teacher	235	27	Help	38
3	App	223	28	Exciting	37
4	Teacher's Room	174	29	Cool	36
5	I	153	30	Chat	35
6	Teacher's Room	149	31	Spam	35
7	Videos	132	32	Complete	34
8	Help	127	33	Easy	34
9	Room	127	34	Study	33
10	Study	112	35	So	33
11	Material	111	36	Child	33
12	Like	84	37	Easy	33
13	Application	71	38	Lesson	33
14	Application	70	39	Learning	33
15	In	68	40	Class	31
16	Already	64	41	More	31
17	Question	63	42	Understand	31
18	Room	59	43	Please	31
19	Best	56	44	Always	31
20	Feature	56	45	Study	31
21	Love	56	46	Subscribe	28
22	Updates	55	47	Error	27
23	Applications	47	48	Subscriber	27
24	Now	39	49	Downloads	26
25	Help	39	50	Bugs	25

The word learning which has the highest frequency (261 times) confirms that the user's main focus is the learning process offered by the Ruangguru application. This shows that this application is widely known and used for learning activities. This is in line with Chinmi & Marta (2020), the use of learning applications increased significantly during the distance learning period forced by the COVID-19 pandemic. The words teacher and app appear with high frequency (235 and 223 times respectively) indicating the important role of teachers in learning applications and recognition of applications as supporting tools. According to Fikriya et al. (2021), interaction with quality teachers is a

learning process. Furthermore, we see connectivity between the words easy and learn, which provides insight that users find this application makes the learning process easier. There may be features that support self-directed learning or provide resources that users can easily access and understand.

The relationship between now and already can indicate a discussion about the comparison between previous experience and experience after using the application. Perhaps this reflects a positive change in how users learn or respond to learning materials. The use of words such as love and help in the same context as learning may indicate feelings of gratitude or appreciation towards the application for the support provided in learning. This could include technical support, availability of materials, or the learning community built into the app.

DISZCUSSION

The word frequency and co-occurrence analysis that has been carried out provides a broader understanding of user perceptions of the Ruangguru application. Words such as learning, teacher, and video that appear with high frequency emphasize the application's focus on the learning process, the role of educators, and the use of video media as a teaching aid. This is in line with current educational technology trends, where video content is becoming increasingly important in delivering learning material that is interesting and easy to understand, as explained in the cognitive theory of multimedia learning (Mayer, 2009). The emergence of the words app and application emphasizes the shift in the educational paradigm from traditional to digital methods, indicating the widespread adoption of online learning among Indonesian students. This reflects a study by Kukulska (2007), which outlines how mobile learning applications can support independent and flexible learning. In the co-occurrence analysis, the close relationship between the words learning and video shows that video is one of the main features that is rated positively by users. This indicates that Ruangguru may have successfully implemented the recommendations from the study by Nie et al. (2011), who stated the importance of multimedia content in increasing student engagement and learning motivation.

Furthermore, the high frequency of the words Ruang and guru indicates Ruangguru's strong brand identity in its user community. This shows that Ruangguru has succeeded in building positive brand awareness and becoming top-of-mind in the context of digital education in Indonesia. This achievement is in line with Aaker's (1991) research, which emphasizes the importance of brand awareness in creating customer loyalty and competitive advantage. The words help and love that appear in the analysis show aspects of interactivity and assistance provided by the application. This indicates that the application is not only used as an independent learning medium, but also as a platform that facilitates social interaction and academic assistance. Peer-to-peer support and assistance from tutors provided through applications appear to play an important

role in the learning experience, supporting the importance of social interaction in learning (Vygotsky, 1978).

In the co-occurrence analysis, the close relationship between learning and videos with words such as easy, helpful, and features shows that learning videos and application features contribute greatly to making the user's learning process easier. This aspect shows Ruangguru's success in utilizing video as an effective learning medium, in line with the Dual Coding theory where the combination of verbal and visual can strengthen understanding and retention of information (Paivio, 1991). The presence of the word update also shows Ruangguru's awareness and efforts to continuously update and perfect its application, which is best practice in software and mobile application development (Inal et al., 2020). These continuous efforts in improvements and enhancements not only increase user satisfaction but also maintain the application's relevance in a competitive market. The use of textual analysis in this research provides an overview of the aspects that Ruangguru users consider important and how these elements are related to each other. These findings underscore how learning apps have become a vital educational resource, especially in an era where digital learning continues to develop.

PENUTUP

This research has revealed several important aspects of using the Ruangguru application for online learning in Indonesia. Through word frequency and co-occurrence analysis, it was identified that words such as learn, teacher, and video were the main focus in user reviews, indicating the importance of interactivity and quality learning materials in the app. The use of online learning applications, characterized by the words application and app, has become an integral part of the educational process in the digital era, indicating an increasing transition from conventional learning methods to more modern and technological ones. From this analysis, it can be concluded that Ruangguru has succeeded in meeting several basic learning needs of students in Indonesia, in accordance with user expectations for effective and efficient learning technology.

However, this study has limitations that must be considered. The analysis performed was limited to qualitative data from user reviews, which does not fully capture the complexity of their subjective experiences. Therefore, future research could adopt quantitative methods, such as using regression analysis and other deep statistical insights into individual user experiences. Apart from that, future research can also explore comparisons between the Ruangguru application and other online learning platforms to determine the factors that differentiate and define success in the context of online learning in Indonesia. Thus, this research paves the way for further investigation into how educational technology can be optimized to support a more effective and satisfying learning process for students.

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