Analysis of Students' Interest in Utilizing Educational Applications During Leisure Time Using the Technology Acceptance

Hoiriah[1], Haddiel Fuad[2], Aspari[3]
[1,2,3]Bina Sarana Informatika University, Jl. Kramat Raya No. 98 Kramat, Senen, Jakarta Pusat 10450, Indonesia
Email: hoiriah.hrh@bsi.ac.id[1], m.haddiel.mhf@bsi.ac.id[2], aspari.spa@bsi.ac.id[3]

The rapid development of digital technology has created various new opportunities in the education sector, particularly in supporting learning activities outside school hours. This study aims to examine students' interest in using digital educational applications beyond formal classroom time by applying the Technology Acceptance Model (TAM). The model emphasizes three key variables: Perceived Usefulness, Perceived Ease of Use, and Behavioral Intention. The study was conducted at a junior high school in South Tangerang using a quantitative research approach. Data were collected through the distribution of Google Form–based questionnaires to 123 respondents who met the research criteria and were analyzed using validity and reliability tests, as well as t-tests and F-tests, with SPSS software. The results indicate that perceived usefulness and perceived ease of use have a significant influence on students' interest in using digital educational applications, both simultaneously and partially. An F-value of 47.962 with a significance level of 0.000 demonstrates that the independent variables positively affect students' interest in using digital educational applications. These findings confirm the importance of educational applications as alternative learning media and highlight the need for educational institutions to optimize the use of digital technology in supporting students' independent learning processes.

Keywords: Technology Acceptance Model, Educational Applications, Leisure Time Learning, Student Interest, Behavioral Intention

Corresponding Author:
Hoiriah
Bina Sarana Informatika University
Jl. Kramat Raya No. 98 Kramat, Senen, Jakarta Pusat 10450, Indonesia
hoiriah.hrh@bsi.ac.id

1. Introduction

Developments in the field of information and communication technology over the past twenty years have had a major impact on the education sector. The emergence of digital education has become one of the breakthroughs that support learning activities outside school hours by providing a learning environment that is more flexible, interactive, and independent for students (Amalia et al., 2024). This transformation became increasingly significant following the COVID-19 pandemic, which accelerated the adoption of technology-based learning across various levels of education. However, the effectiveness of using digital educational applications is not determined solely by their availability, but also depends on the extent of students' interest in using them regularly (Murdianti, 2024). In other words, students' learning interest plays a key role in the successful utilization of digital educational applications.

The Technology Acceptance Model is one of the most widely applied theoretical models for explaining the elements that influence technology acceptance and usage. This model focuses on three key variables, namely perceived usefulness, perceived ease of use, and behavioral intention. In the educational context, the belief that an application is useful and easy to operate is believed to encourage students to continue using it to support independent learning. Various previous studies have shown that these two factors have a significant influence on the adoption of e-learning and digital-based learning applications.

Nevertheless, many previous studies have placed greater emphasis on formal learning situations in universities or the implementation of blended learning, while studies that focus on the use of digital educational applications outside school hours at the junior secondary school level remain relatively limited. This indicates the existence of a research gap, particularly in understanding how junior secondary school students, as early users of digital educational technology, develop their interest and perceptions toward these applications (Wijaya & Wisesa, 2023). On the other hand, the characteristics of students at the middle school age, who are in the process of forming technology-based learning habits, offer an interesting opportunity for further analysis.

This research was conducted at a public junior secondary school in South Tangerang, an educational institution that was recently established and is currently in the process of developing infrastructure and adjusting students' learning culture. This condition presents both opportunities and challenges in the implementation of learning technology.

By applying the Technology Acceptance Model approach, this study specifically examines the influence of perceived usefulness and perceived ease of use on students' interest in utilizing digital educational applications outside formal learning hours. This methodology was chosen because it offers a structured analytical framework for assessing how students accept technology. The uniqueness of this study is reflected in two main aspects. First, the focus is directed toward the context of a newly established junior secondary school, where students are still in the stage of adapting to the intensive use of digital learning applications. Second, this study emphasizes the use of digital educational applications outside school hours, rather than solely within formal classroom learning activities. This distinguishes the study from most previous research, which typically concentrates on the use of e-learning in formal learning activities or at higher levels of education. Accordingly, this study is expected to contribute theoretically to enriching research on the acceptance of educational technology based on the Technology Acceptance Model, while also providing practical recommendations for schools in formulating appropriate strategies to enhance the effectiveness of application-based digital learning in accordance with students' needs and interests.

2. Literature Review and Problem Statement

Literature Review

The rapid advancement of information and communication technology has significantly reshaped contemporary educational practices, particularly through the integration of digital learning applications. Educational applications are increasingly used not only to support formal classroom instruction but also to facilitate self-directed learning beyond school hours. These applications offer flexibility, accessibility, and interactive features that enable students to engage with learning materials according to their individual pace and interests. As digital literacy becomes an essential competence for students, understanding the factors that drive voluntary and sustained use of educational applications has become an important area of educational research.

One of the most widely adopted theoretical frameworks for examining technology adoption is the Technology Acceptance Model. This model explains user acceptance of technology through core constructs, namely perceived usefulness, perceived ease of use, and behavioral intention. Perceived usefulness refers to the extent to which users believe that a technology enhances their performance, while perceived ease of use reflects the degree to which the technology is perceived as effortless to operate. Behavioral intention represents the motivational factors that influence an individual's willingness to use a particular system. Numerous studies have confirmed that perceived usefulness and perceived ease of use are critical determinants of users' intention to adopt digital technologies in educational settings.

In the context of education, prior research has consistently shown that students are more inclined to use digital learning platforms when they perceive them as beneficial for improving academic understanding and when the applications are user-friendly. Studies on e-learning and mobile learning demonstrate that applications that reduce cognitive effort while providing clear learning value tend to foster positive attitudes and repeated usage. These findings suggest that technological design and perceived educational relevance play a central role in shaping students' acceptance of learning technologies.

However, the majority of existing studies have focused on higher education environments or formal instructional settings, such as online courses and blended learning systems. Research that explores the use of educational applications during students' leisure time, particularly at the junior secondary school level, remains limited. Junior secondary school students represent a critical group because they are in a transitional stage of developing independent learning habits and digital learning cultures. Their perceptions of usefulness and ease of use may differ from those of older students due to variations in cognitive development, learning motivation, and digital experience.

Furthermore, learning activities conducted during leisure time are largely driven by intrinsic motivation rather than institutional requirements. This makes students' interest and voluntary engagement especially important factors in determining whether educational applications are actually used outside formal learning contexts. Understanding how perceived usefulness and perceived ease of use influence students' interest in such settings can provide valuable insights for educators and application developers seeking to design more engaging and effective digital learning tools.

Problem Statement

Despite the growing availability of educational applications and the increasing emphasis on digital learning, there is limited empirical evidence explaining why junior secondary school students choose to use or avoid educational applications during their leisure time. Existing research has predominantly examined technology acceptance within formal learning environments or among university students, leaving a gap in understanding technology acceptance among younger learners in informal learning contexts.

In particular, it remains unclear how perceived usefulness and perceived ease of use influence students' interest in voluntarily engaging with educational applications beyond school hours. Without this understanding, schools may face difficulties in promoting effective independent learning through digital platforms, and developers may struggle to align application design with students' actual needs and preferences.

Therefore, this study addresses the need to examine students' interest in utilizing educational applications during leisure time by applying the Technology Acceptance Model within a junior secondary school context. By focusing on perceived usefulness, perceived ease of use, and behavioral intention, this research seeks to provide a clearer explanation of the factors that shape students' acceptance of educational applications outside formal instructional settings. The findings are expected to contribute both theoretically, by extending the application of the Technology Acceptance Model to informal learning among younger students, and practically, by offering insights for schools and developers in enhancing the effectiveness of digital learning initiatives.

3. Method

This study adopts a quantitative research method because all stages of analysis are based on the processing of numerical data obtained through structured questionnaires. The theoretical framework employed is the Technology Acceptance Model (TAM), originally developed by Davis in 1989. This model

has been widely applied in educational studies due to its ability to explain the key factors influencing technology adoption.

The basic structure of the model positions perceived usefulness and perceived ease of use as critical determinants of users' behavioral intention toward technology (Pangestu et al., 2023). Based on this framework, the present study aims to assess the extent to which these two variables influence students' interest in using digital educational applications outside school hours.

The research location was determined to be a junior high school in South Tangerang. This school was selected because it is currently in the process of developing a learning culture that integrates technology. This condition provides an opportunity to capture insights into technology acceptance within an educational environment that has not yet reached full stability. The research sample consisted of 123 students from grades VII to IX. The sampling technique used was purposive sampling, with the criterion that respondents had prior experience using digital learning applications such as Ruangguru, Zenius, or Google Classroom (Bong & Firmansyah, 2023). Data were collected through Google Form–based questionnaires to ensure efficient distribution and ease of access for students.

The research instrument was developed using a five-point Likert scale. The construction of questionnaire items was based on the variable indicators defined within the TAM framework (Amalia et al., 2024). Prior to the main analysis, the instrument was tested for validity and reliability using SPSS version 26. Validity testing was conducted using the Corrected Item–Total Correlation method by comparing the correlation value of each item with the r-table value (Murdianti, 2024). Reliability testing employed Cronbach's Alpha to ensure internal consistency across all measurement items (Bhasarie et al., 2021). All questionnaire items were found to be valid and reliable and were therefore suitable for hypothesis testing.

The research process was carried out through a series of structured stages. The initial stage involved identifying problems related to the limited use of digital learning applications outside school hours. The next stage consisted of a literature review to identify an appropriate theoretical model. The third stage involved determining the research variables based on the Technology Acceptance Model (TAM). The fourth stage focused on formulating research hypotheses, followed by the development of the questionnaire instrument. The sixth stage involved distributing the questionnaires, while the seventh stage encompassed testing the validity and reliability of the measurement instrument. The eighth stage involved data processing using inferential statistical methods. The relationships among variables were analyzed using multiple linear regression. The analytical model is expressed as:

$$Y = a + b_1X_1 + b_2X_2 + e$$

where Yrepresents behavioral intention, X_1represents perceived usefulness, and X_2represents perceived ease of use. Hypothesis testing was conducted using t-tests to examine the individual effects of each independent variable and F-tests to assess their simultaneous effects. The findings derived from these tests provide empirical evidence for evaluating the applicability and accuracy of the Technology Acceptance Model in the context of junior high school education.

4. Results and Discussion

The results of the validity test are presented in the following table.

Table 1. Validity Test Results

Variable	Item	r-value	r-table	Remark
Perceived Usefulness	PU1	0.711	0.177	Valid
	PU2	0.764	0.177	Valid

Variable	Item	r-value	r-table	Remark
	PU3	0.656	0.177	Valid
	PU4	0.744	0.177	Valid
	PU5	0.626	0.177	Valid
	PU6	0.584	0.177	Valid
	PU7	0.696	0.177	Valid
Perceived Ease of Use	PEOU1	0.735	0.177	Valid
	PEOU2	0.740	0.177	Valid
	PEOU3	0.740	0.177	Valid
	PEOU4	0.759	0.177	Valid
	PEOU5	0.694	0.177	Valid
	PEOU6	0.756	0.177	Valid
	PEOU7	0.572	0.177	Valid

Stage 6 involved the distribution of questionnaires. Stage 7 included testing the validity and consistency of the measurement instruments. Stage 8 involved data processing using statistical methods.

Table 2. Validity Test Results for Behavioral Intention

Variable	Item	r-value	r-table	Remark
Behavioral Intention (BI)	BI 1	0.687	0.177	Valid
	BI 2	0.535	0.177	Valid
	BI 3	0.759	0.177	Valid
	BI 4	0.764	0.177	Valid
	BI 5	0.765	0.177	Valid
	BI 6	0.577	0.177	Valid

Based on the table presented above, it can be seen that instrument validity is determined through the evaluation of significance values. Measurement instruments that produce significance values below 0.05 are considered valid, while values exceeding this threshold indicate that the indicators do not accurately represent the constructs being measured (Bong & Firmansyah, 2023). Therefore, it can be concluded that all instruments used in this study demonstrate an acceptable level of validity.The results of the reliability test are presented in the following table.

Table 3. Reliability Test Results

No	Variable	Cronbach's Alpha	Remark
1	Perceived Usefulness (PU)	0.800	Reliable
2	Perceived Ease of Use (PEOU)	0.833	Reliable
3	Behavioral Intention (BI)	0.775	Reliable

Questionnaire reliability is considered satisfactory when the Cronbach's Alpha value exceeds the minimum threshold of 0.6, indicating that each statement item demonstrates a high level of internal consistency (Bong & Firmansyah, 2023). Therefore, it can be concluded that all instruments used in this study possess an adequate level of reliability. All hypotheses were evaluated using regression analysis supported by SPSS Statistics version twenty-six. A summary of the analytical output is presented in the following table as the basis for interpreting the research findings.

Table 4. Results of Partial Hypothesis Testing (t-test)

No	Variable	t-table	t-value	Sig.	Decision
1	Perceived Usefulness (PU)	2.012	3.617	0.000	Accepted
2	Perceived Ease of Use (PEOU)	2.012	3.995	0.000	Accepted

The results of the regression analysis indicate that all tested relationships demonstrate acceptable levels of significance. A detailed explanation of each hypothesis test is presented in the following sections.

Hypothesis One Testing

The significance value for the effect of perceived usefulness on behavioral intention indicates a value of 0.000, with a t-value exceeding the critical t-table value of 2.012. This result allows the conclusion that the first hypothesis is accepted, indicating a positive and significant relationship between perceived usefulness and behavioral intention to use. In other words, students' understanding of the usefulness of digital educational applications has a significant influence on their behavioral intention to use these applications.

Hypothesis Two Testing

The significance value for the effect of perceived ease of use on behavioral intention is 0.000, with a t-value exceeding the critical t-table value of 2.012. This finding leads to the conclusion that the second hypothesis is accepted, indicating a positive and significant relationship between perceived ease of use and behavioral intention to use. This means that students' perceptions of the ease of using digital educational applications significantly influence their intention to engage with these applications.

5. Conclusion

This study provides empirical evidence on students' acceptance of educational applications during leisure time by applying the Technology Acceptance Model in the context of junior secondary education. The findings demonstrate that students' perceptions of usefulness and ease of use play a central role in shaping their behavioral intention to utilize digital educational applications beyond formal learning hours. When students perceive that an application meaningfully supports their learning needs and can be operated without difficulty, they are more likely to engage with it voluntarily and consistently. The results highlight the importance of perceived usefulness as a key driver of students' interest, suggesting that educational applications should clearly demonstrate learning value and relevance to students' academic goals. At the same time, perceived ease of use reinforces positive attitudes toward technology by reducing cognitive and technical barriers, thereby encouraging sustained engagement. Together, these factors confirm the applicability of the Technology Acceptance Model in explaining students' technology acceptance within informal learning environments. From a practical perspective, the findings suggest that schools should integrate digital applications that are both pedagogically beneficial and user friendly to foster independent learning habits among students. Developers are encouraged to design intuitive interfaces and meaningful learning features that align with students' daily digital behavior. Overall, this study contributes to the literature on educational technology acceptance by extending the use of the Technology Acceptance Model to leisure time learning at the junior secondary school level and provides insights for enhancing the effectiveness of application based digital learning initiatives.

6. Referensi

Amalia, M., Pratama, M. V., Pratiwi, N. A., & Fujiarti, A. (2024). Pengaruh media interaktif terhadap minat belajar siswa pada pembelajaran IPA kelas empat sekolah dasar. *Jurnal Jendela Pendidikan, 4*(1), 39–47. https://doi.org/10.57008/jjp.v4i01.689

Bhasarie, H. A., Rokhmawati, R. I., & Muslim Az-Zahra, H. (2021). Analisis faktor-faktor yang memengaruhi penerimaan teknologi menggunakan kuesioner Technology Acceptance Model pada e-learning Google Classroom di SMK Negeri dua Kupang. *Jurnal Pengembangan Teknologi Informasi dan Ilmu Komputer, 5*(7), 2871–2876. http://j-ptiik.ub.ac.id

Bong, V., & Firmansyah, M. D. (2023). Analisa Duolingo terhadap prestasi bahasa Inggris siswa sekolah

menengah pertama Batam dengan metode Technology Acceptance Model. *Jurnal Informasi dan Teknologi, 5*(3), 122–130. https://doi.org/10.60083/jidt.v5i3.407

Martha, M., & Zulherman. (2022). Pengaruh blended e-learning system self-efficacy terhadap minat siswa menggunakan video animasi pembelajaran berdasarkan Technology Acceptance Model. *Jurnal Cakrawala Pendas, 8*(4), 1081–1094. https://doi.org/10.31949/jcp.v8i4.2819

Murdianti, W. (2024). Inovasi media pembelajaran digital untuk meningkatkan minat belajar di era digital. *Jurnal Pendidikan Digital, 4*, 1–10.

Pangestu, S. A., Setyosari, P., & Kuswandi, D. (2023). Analisis persepsi kesiapan mobile learning menggunakan Technology Acceptance Model dalam pembelajaran bahasa Jawa. *JKTP: Jurnal Kajian Teknologi Pendidikan, 6*(3), 152–160. https://doi.org/10.17977/um038v6i32023p152

Sugiyono, S., & Sulaiman, E. O. P. (2024). Penerimaan teknologi pendidikan menggunakan Technology Acceptance Model: Studi kasus pada aplikasi Ruang Guru. *INTECOMS: Journal of Information Technology and Computer Science, 7*(1), 268–281. https://doi.org/10.31539/intecoms.v7i1.7170

Wijaya, M. F., & Wisesa, A. (2023). Evaluating young students' e-learning acceptance in extracurricular education using a modified Technology Acceptance Model. *Jurnal Sosioteknologi, 22*(1), 2–10. https://doi.org/10.5614/sostek.itbj.2023.22.1.1