

Students' Perceptions of Android-Based Digital Textbooks: An Empirical Study with the Technology Acceptance Model

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ABSTRACT

Objective: Development of OBE (Outcome-Based Education) curriculum-based digital textbooks to strengthen students' abilities and skills in order to support the achievement of learning outcomes in accordance with the graduate profile of the study program. In line with learning objectives that are relevant to the needs of the world of work, the content and guidelines in this textbook are expected to help students master the competencies specified in the Semester Learning Plan (RPS) for each course. **Method:** The research used a descriptive statistical analysis approach with 60 undergraduate students from the Office Administration Education Study Program at UNESA, UM, and the Office Administration Management Study Program at UPI as subjects. The instruments included student perceptions based on TAM indicators (Perceived Usefulness/PU, Perceived Ease of Use/PEOU, Attitude Toward Using/ATU, Behavioral Intention/BI, Actual System Use/ASU). **Results:** This study indicate that this digital textbook is effective in improving learning performance, motivation, and actual use, supporting the transformation of digital education in higher education. **Novelty:** Novelty of this research is the analysis of Android-based digital textbooks for the Electronic Records Management course, which is in line with the Outcome-Based Education (OBE) curriculum and integrated with the Technology Acceptance Model (TAM).

INTRODUCTION

The development of digital technology has brought about a major transformation in education, requiring educators to adapt to these advances. Educators who continuously develop themselves will be able to face the challenges of future education and create more innovative learning that is in line with the times (Wulandari et al., 2025). E-books play an important role in realizing a more efficient learning process in a digital-based classroom environment (Kurnia et al., 2025). Currently, the use of electronic books is gaining attention due to changes in the use of technology in education (Xodabande & Hashemi, 2023; Zasiiekina et al., 2025) Based on Statista data (2025), the e-book market revenue in Indonesia reached €45.04 million in 2025. The number of e-book users is predicted to increase to around 24.39 million in 2030. In addition, the penetration rate of e-book users in Indonesia is projected to rise from 6.96% in 2025 to around 8.35% in 2030. Digital textbooks typically feature videos, simulations, interactive activities, and various multimedia components that support diverse learning styles while illustrating complex ideas through dynamic real-world examples. These multimedia features enhance engagement and interactivity, allowing students to understand and remember information more effectively. By combining various multimedia features and reading aids, electronic textbooks provide a new learning experience for students that cannot be obtained from ordinary printed books. This statement is also supported by (Prasetyo et al., 2024) research, which states that interactive features in e-books, such as animations,

audio, and games, have been proven to increase students' interest in reading and make the reading experience more interesting and enjoyable.

Previous studies have shown that digital textbooks offer an effective alternative solution to overcome the limitations of printed books, such as accessibility, cost, and storage space issues, while providing interactive features that enhance the learning experience for students (Lee et al., 2023). These electronic books will replace printed textbooks as we shift towards digitization. This transition is driven by the ease of access and portability offered by digital books, as well as their quick search capabilities, digital annotations, and interactive multimedia content that enrich the learning experience and improve learning effectiveness. E-books are easy to use, cost-effective, and portable, allowing users to access learning materials anytime and anywhere. In addition, the multimedia content and interactive features in digital books support the improvement of learning competencies and facilitate a more dynamic and effective learning process (Nadhifah, 2022). The importance of digital technology in education allows learning materials to be more interactive, interesting, and supports distance learning and personalized learning (Putra et al., 2024). Another perception in the study describes various obstacles in implementing critical education, including limited access to technology, lack of training for educators, and a school culture that is still predominantly authoritarian (Nurmaulidah et al., 2025). Previous studies have shown that digital teaching materials are suitable for use in learning because they are in line with developments and innovations in education and are adapted to current needs that are shifting the system towards digital (Guswita, 2021).

The Bachelor of Office Administration Study Program currently uses an OBE (Outcome-Based Education) curriculum. The implementation of OBE in Indonesian universities focuses on empowering students to develop various important competencies, such as critical thinking, problem solving, communication, and cooperation (Asbari & Nurhayati, 2024). As a result, it can be claimed that OBE is the cornerstone of obtaining a top-notch education. Additionally, because OBE include learning objectives that graduates must meet, it may be seen as applicable today (Gede Agus Jaya Negara et al., 2024). According to study by (Rizki & Koto, 2024) OBE has been shown to enhance critical thinking and collaborative skills, which are in accordance with the demands of the workplace in this industry. Although various studies have highlighted the benefits of e-books in learning, the findings still show inconsistencies regarding their effectiveness in improving OBE-based specific competencies. In addition, research on Android-based digital textbooks is still limited in the context of office administration education in Indonesia, so empirical evidence is not yet strong enough. The relationship between the implementation of OBE and technology acceptance through TAM has also not been comprehensively analyzed, particularly in Electronic Records Management courses.

Studies Granić (2022) analyzing the adoption of educational technology emphasize that the core variables of TAM, perceived usefulness and ease of use, are influenced by factors such as user attributes, task-technology fit, and social aspects. These factors

enhance the prediction of behavioral intention, which is crucial in technology acceptance in educational settings.

One of the compulsory courses in this study program is Electronic Records Management, which students must take after completing the Records Management course. Currently, lecturers have provided several teaching materials such as PowerPoint presentations and research journals, but a student guidebook is not yet available because a printed textbook is still needed to support the learning process. Therefore, the development of a digital textbook that is in line with the OBE (Outcome-Based Education) curriculum is very important to support the achievement of learning objectives and improve students' skills and competencies in accordance with the graduate profile of the Bachelor of Office Administration Education Study Program.

Various devices, such as mobile phones, laptops, computers, PDAs (Personal Digital Assistants), and other portable electronic devices, can be used to read digital textbooks. Digital books can also be equipped with additional features, such as hyperlinks and are available in various file formats. Based on field observations, this study uses Android-based digital textbooks, considering that all students already have smartphones that support this technology. According to the Technology Acceptance Model (TAM), this condition shows that students' Perceived Usefulness (PU): The degree to which an individual thinks that utilizing technology (such as interactive textbooks) would enhance their effectiveness in teaching or learning. Perceived Ease of Use (PEOU): A person's perception of how simple and trouble-free technology is to use. A person's positive or negative attitude toward utilizing technology is known as their Attitude Toward utilizing (ATU). A person's desire to keep utilizing the technology in the future is known as behavioral intention to use (BI). The novelty of this research is that it analyzes the development of Android-based digital textbooks for Electronic Records Management courses, which are in line with the Outcome-Based Education (OBE) curriculum and integrated with the Technology Acceptance Model (TAM). The main innovation lies in the use of interactive multimedia features (such as videos, simulations, and hyperlinks) tailored for Android devices, which have not been widely explored in the context of office administration education in Indonesia, thus distinguishing it from conventional digital textbooks.

In an attempt to apply student-centered learning, the researcher is interested in developing a digital textbook for the Electronic Records Management course based on the description given above. In line with learning objectives that are relevant to the needs of the world of work, the content and guidelines in this textbook are expected to help students master the competencies specified in the Semester Learning Plan (RPS) for each course. This study aims to produce an Android-based digital textbook for the Electronic Archives Management course that can improve students' skills in accordance with the RPS, as well as analyze students' perceptions of its acceptance using the TAM framework. The urgency of this study lies in the development of a digital textbook based on the OBE (Outcome-Based Education) curriculum in order to strengthen students' abilities and skills in order to support the achievement of learning outcomes in accordance with the graduate profile of the study program.

RESEARCH METHOD

This study uses a Descriptive Statistical Analysis model to systematically describe the characteristics of the research data with the aim of presenting an overview without making comparisons or testing the relationship between variables. Data collection for this study was conducted using instruments distributed via Google Forms with the aim of assessing the extent to which users understand and are interested in using electronic-based digital books. According to Marlinda (2021) research, Google Forms is a practical tool for routine assessment and online response collection because it is time- and cost-effective and easily accessible to participants. Therefore, this platform is suitable for use as a survey instrument related to the use of digital books. Descriptive statistical analysis includes the process of collecting, presenting, and determining the measures of central tendency and dispersion of data used to draw conclusions about the characteristics of the data group being studied (Nasution, 2017). The subjects of this study were 60 students from the Bachelor of Office Administration Study Program at UNESA, UM, and the Bachelor of Office Administration Management at UPI. Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Attitude Toward Using (ATU), Behavioral Intention (BI), and Actual System Use (ASU) indicators were used in the TAM approach to measure student perceptions in addition to expert validation.

Table 1. Expert Validation Interpretation

Percentage	Expert Validation Interpretation
0% - 20%	Unworthy
20% - 40%	Not Feasible
40% - 60%	Quite Decent
60% - 80%	Worthy
80% - 100%	Very Worthy

The TAM approach, which measures student perceptions using the indicators of Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Attitude Toward Using (ATU), Behavioral Intention (BI), and Actual System Use (ASU), uses quantitative analysis in addition to expert validation.

Table 2. Average Value Range

Mean	Mean Interpretation
1.00 – 1.79	Very Low
1.80 – 2.59	Low
2.60 -3.39	Simply
3.40 – 4.19	High
4.20 – 5.00	Very High

Based on the table, the criteria for interpreting the results of the Technology Acceptance Model (TAM) variable analysis allow researchers to assess the total number of student responses for each interpretation criterion in accordance with the table.

RESULTS AND DISCUSSION

Results

Office administration has undergone substantial changes as a result of the quick advancement of information technology, which has made it possible to automate a number of administrative chores and promote digital communication. Digitization in the office environment can increase overall efficiency and productivity (Jones & George, 2019). This can be seen in the implementation of digital systems that simplify electronic file management, reduce manual workloads, and optimize accessibility. These developments form the basis for the development of digital textbooks that utilize technology to meet modern management needs.

Electronic records management involves the systematic handling of digital information for the purposes of storage, access, and preservation of data. This trend is driven by the growing need for high data security in records management (Smith, 2020). The textbook aims to cover the basic concepts of electronic records management so that students understand the principles of modern archiving and are ready to apply them in line with the latest developments.

In Indonesia, regulations on electronic archives govern the legality and management of digital information, including personal data protection. For example, Law No. 11 of 2008 concerning Electronic Information and Transactions (ITE) serves as a guideline for the protection of digital data and information. Understanding this policy is important in producing a workforce that understands the legal aspects of electronic records management. Therefore, this textbook is designed to equip students with relevant legal knowledge so that they can face legal challenges in the workplace.

Electronic archives require secure storage methods, routine maintenance, and data migration strategies to ensure that information is preserved. Data maintenance and migration are important to prevent the loss of electronic archives over time (Matlala et al., 2022). This textbook provides material that focuses on best practices in the creation and maintenance of electronic archives, which is important for students to master essential basic skills in the field of office management.

Electronic archive security emphasizes efforts to protect against cyber threats and the implementation of restricted access policies. Digital security in electronic archives involves the use of encryption technology and authorization-based access controls (Carroll, n.d.) In this textbook, archive security material is presented so that students understand the importance of digital data protection, including the use of encryption and access controls, to maintain the confidentiality and integrity of archives.

The textbook was tested on a large scale at State Universities in Java to measure the effectiveness of digital books through student perceptions with the TAM model. The instrument was a questionnaire response to the digital book. Data analysis was conducted using IBM SPSS Statistics 27.

Discussion

Table 3. Results of descriptive statistical analysis: Perceived Usefulness (PU)

Variable	N	Minimum	Maximum	Mean	Std. Deviation	Mean Interpretation
PU1	60	2.00	5.00	3.95	1.11	High
PU2	60	2.00	5.00	4.18	0.92	High
PU3	60	2.00	6.00	4.10	0.96	High
PU4	60	2.00	6.00	4.30	0.90	Very High
Valid N (listwise)	60					

Based on the results of the descriptive analysis test of use the average value of the Perceived Usefulness (PU) variable is classified as (high), textbooks that support the TAM framework in this study, all indicators in the Technology Acceptance Model (TAM) model show that respondents generally have a positive and consistent perception of the system used. Students believe using interactive textbooks will greatly improve their learning performance, particularly in terms of comprehending the material and finishing assignments, as indicated by the mean value of the Perceived Usefulness (PU) variable, which ranges from 3.95 to 4.30 (maximum scale of 5). This finding is supported by Cheung et al., (2023) According to studies on university students' usage of Open Educational Resources (OER), OER's perceived value was strongly linked to better academic achievement, particularly when it came to final project completion and exam preparation. Furthermore, research by (Chen et al., 2025) Perceived Usefulness PU is a powerful predictor of satisfaction and continuing intention, as it generates the opinion that the use of technology will have a beneficial influence on learning outcomes, according to the TAM framework applied to higher education. Students' belief that using e-books enhances their academic performance is the main factor influencing their adoption. PU is a crucial factor in determining students' intentions to utilize e-books, according to studies(Salloum, 2019). Thus, a high average PU is not just a positive perception, but reflects the concrete belief of students that this digital textbook will really improve their academic performance.

Table 4. Results of descriptive statistical analysis: Perceived Ease of Use (PEOU)

Variable	N	Minimum	Maximum	Mean	Std. Deviation	Mean Interpretation
PEOU1	60	3.00	5.00	4.56	0.62	Very High
PEOU2	60	3.00	5.00	4.05	0.81	High
PEOU3	60	3.00	6.00	4.36	0.68	Very High
PEOU4	60	3.00	6.00	4.61	0.61	Very High
Valid N (listwise)	60					

The Perceived Ease of Use (PEOU) variable recorded even higher averages, ranging from 4.05 to 4.61, reflecting that students believed the interactive coursebook was very easy to use. Perceived ease not only increases users' motivation to try new technologies

but also forms the belief that the use of digital coursebooks will be smooth and enjoyable in the long run. This finding is supported by (Linus et al., 2025) that students generally find online learning tools very easy to use, and this ease is strongly correlated with their intention to continue using the tool. In addition, a meta-analysis on e learning in higher education showed that PEOU consistently had a significant effect on PU (perceived usefulness), and this relationship was even more pronounced among students from different countries, including Oman, Pakistan, and China (Barz et al., 2024). Thus, a high average PEOU indicates that students feel very confident and comfortable in using interactive coursebooks, without feeling technically burdened. This not only facilitates early adoption but also supports continued use in the daily learning process.

Table 5. Results of descriptive statistical analysis: Attitude Toward Using (ATU)

Variable	N	Minimum	Maximum	Mean	Std. Deviation	Mean Interpretation
ATU1	60	3.00	5.00	4.56	0.62	Very High
ATU2	60	3.00	5.00	4.05	0.81	High
ATU3	60	3.00	6.00	4.36	0.68	Very High
ATU4	60	3.00	6.00	4.61	0.61	Very High
Valid N (listwise)	60					

In the Attitude Toward Using (ATU) variable, all indicators show a (high) average value, ranging from 4.05 to 4.61, This indicates that respondents' attitudes on the usage of digital textbooks are rather favorable. This high score suggests that attitudes supporting the use of learning technology have been established by perceived utility (PU) and ease of use (PEOU). The ATU measurement specifically describes the general attitude of students towards the use of interactive coursebooks, whether they find this coursebook interesting, fun, and useful in supporting their learning process. This result is consistent with research on interactive e-book use, which demonstrates that PEOU and PU significantly influence attitude (ATU), and attitude is a significant predictor of continuing intention in the educational setting (Zhang et al., 2021). In addition, research on digital textbook use in Indonesian elementary schools also found that positive attitudes strongly influence continuance intention, reinforcing the role of ATU in digital textbook adoption (Hermita et al., 2023). Thus, a high average ATU score not only reflects students' positive perceptions but also indicates their mindset readiness to accept and use interactive textbooks in the long term. This finding strengthens the theoretical foundation of TAM in the context of higher education and supports the strategic recommendation that students should be ready to use interactive textbooks in the long term.

Table 6. Results of descriptive statistical analysis: Behavioral Intention to Use (BI)

Variable	N	Minimum	Maximum	Mean	Std. Deviation	Mean Interpretation
BI1	60	3.00	5.00	4.41	0.64	Very High
BI2	60	3.00	5.00	4.98	0.62	Very High
BI3	60	3.00	6.00	4.48	0.62	Very High
Valid N (listwise)	60					

Based on the results of the descriptive analysis test, the average value of the Behavioral Intention (BI) variable is classified as (very high), the average value of the indicators is in the range of 4.17 to 4.83, indicating that respondents, in this case, students, have strong motivation and intention to continue using this digital textbook in the future. This BI measurement specifically measures the extent to which students intend to continue using the textbook in the future. That is, it does not just mean that they intend once or twice, but shows their commitment to the continued use of coursebooks in further academic activities. This finding is in line with (Panergayo & Aliazas, 2021) which clarifies that behavioral intention variables are the primary predictors of actual use in the context of contemporary education, whereas intentions or attitudes are primarily responsible for the direct influence of constructs like perceived usefulness (PU) and perceived ease of use (PEOU). In addition, research conducted by (Sun et al., 2025) explaining the use of technology such as ChatGPT in lectures identified that high scores on Behavioral Intention (BI) reflect students' readiness and continuous tendency to integrate the technology into their learning practices.

Table 7. Results of descriptive statistical analysis: Actual System Use (ASU)

Variable	N	Minimum	Maximum	Mean	Std. Deviation	Mean Interpretation
ASU1	60	3.00	5.00	4.46	0.62	Very High
ASU2	60	3.00	5.00	4.25	0.70	Very High
Valid N (listwise)	60					

In the Actual System Use (ASU) variable, the average value of the indicators ranges from 4.17 to 4.25, which, although slightly lower than the intention to use (BI), still indicates (very high) actual use by students. The Actual System Use (ASU) measurement reflects the extent to which students use the interactive teaching materials in the learning process, from reading, accessing multimedia features, to applying them in discussions and assignments. This high value indicates that students not only have intentions, but also turn these intentions into real actions in their daily academic activities. This result is consistent with the study conducted by (Wang et al., 2025), who created and verified the Actual System Use scale in relation to online education. The findings show that perceived utility and simplicity of use promote actual usage, which is heavily impacted by internal variables like interactive experience and learning motivation. Then research conducted by (AL-Nuaimi et al., 2023) which integrates TAM into the context of the Learning

Management System (LMS) during the COVID-19 pandemic found that intention and system quality directly affect Actual System usage (ASU), which reflects students' actual usage behavior in online learning settings. Actual System Use (ASU) data still shows that students actively access and utilize interactive teaching materials in the context of online learning.

The findings of this study on the development of Android-based digital textbooks for Electronic Records Management courses are generally consistent with the two main theoretical frameworks used, namely Outcome-Based Education (OBE) and Technology Acceptance Model (TAM). First, the finding that digital textbooks can improve learning performance, motivation, and actual use by students is consistent with the principles of OBE, which emphasizes the achievement of competencies and clear learning outcomes. This book helps students master competencies in line with the graduate profile of the Office Administration Study Program, in accordance with the OBE objective of placing learning outcomes as the main focus of curriculum and learning media development. OBE relies heavily on Continuous Quality Improvement (CQI) cycles, which enable frequent feedback and curriculum and teaching style modifications to match changing educational standards (Dahari et al., 2014, Chowdhury et al., 2023). This reinforces the OBE theory in the context of modern technology-based learning that is oriented towards concrete results for students. The proper implementation of OBE can strengthen the alignment of the curriculum with industry demands while increasing student active participation during the learning process (Warsah et al., 2025). By providing students with pertinent information and skills, OBE helps create a just and sustainable society (Sinha et al., 2022, Mahrishi et al., 2025). OBE prioritizes students' performance and personal growth by putting them at the center of the learning process (Kaur & Girdhar, 2018).

Second, the Technology Acceptance Model (TAM) predicts that students' high ratings of Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Attitude Toward Using (ATU), Behavioral Intention (BI), and Actual System Use (ASU) will result in positive attitudes and intentions for continued use, followed by actual use. These findings support the validity of the TAM model in the context of interactive digital book use in higher education. Perceived ease of use (PEOU) and perceived usefulness (PU) were found to have a strong influence on positive attitudes and students' willingness to use the application, which then had an impact on its actual use (Laily et al., 2024). The reliability of the TAM model in explaining the acceptance of educational technology, including digital books. According to another study, students' attitudes (ATU) and behavioral intentions (BI) to continue using learning technology are significantly influenced by their perceptions of the utility and simplicity of use of e-learning and digital learning apps (Agustina et al., 2023). According to research Siregar et al., (2022) TAM is a suitable framework for comprehending how educational technology is adopted on campus, particularly when it comes to the utilization of interactive learning materials or digital books. This study shows that the effectiveness of learning technology is not only seen from the perspective of technology acceptance, but also from its ability to support the achievement of competencies that can be measured in accordance with the curriculum. This provides a basis for the development of a more comprehensive theory that combines

the technology acceptance framework and outcome-based learning for the optimization of digital learning media.

CONCLUSION

Fundamentals finding: This research finding shows that this digital textbook can help students master competencies in line with the graduate profile of the Office Administration Study Program, in accordance with the OBE objective that places learning outcomes as the main focus of curriculum and learning media development. **Second Finding:** According to the results of Descriptive Statistical Analysis, students have high perceptions of Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Attitude Toward Using (ATU), Behavioral Intention (BI), and Actual System Use (ASU). These findings are consistent with the predictions of the Technology Acceptance Model (TAM), which holds that positive attitudes and intentions for continued use will be formed by perceived usefulness and ease of use, followed by actual use. These findings support the validity of the TAM model in the context of using Android-based digital textbooks in higher education. **Implications:** The finding that students consider Android-based digital books useful, easy to use, and have a high level of usage implies that universities need to consider the development and implementation of similar digital textbooks as a strategy to improve the quality of technology-based learning. **Limitations:** This study only uses descriptive statistical analysis, so the findings are limited to describing the respondents' perceptions. This method does not allow researchers to test causal relationships or the strength of direct influences between variables in the TAM model, such as between perceived usefulness, perceived ease of use, attitude, and behavioral intention. Therefore, inferential analysis or structural models are needed in future studies to gain a deeper understanding. **Future Research:** Researchers recommend that future research apply relationship tests or structural models (SEM analysis) to gain a deeper understanding of the influence between TAM variables. In addition, broader research involving more universities, study programs, or different regions could be conducted to obtain more representative/accurate results.

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