



## Development of Digital Teaching Materials for Introduction to Administration and Management Science Based on Case Studies

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**Abstract.** *The purpose of this study was to analyze the feasibility of developing digital teaching materials for Introduction to Administrative and Management Science based on Case Study and student responses to the development of digital teaching materials for Introduction to Administrative and Management Science based on Case Study. The development of digital textbooks for Introduction to Administrative and Management Science based on case study was developed using the 4-D development model by Thiagarajan, which includes four stages, namely the definition, design, development, and dissemination stages. However, this dissemination stage was not carried out because this study did not measure the effectiveness of the product or student learning outcomes. The feasibility of the developed textbook was determined based on an assessment by material, language, and graphic validation experts. From the overall assessment of the validation experts, the average result of the textbook's feasibility was 87.33% with a very feasible category. Based on this percentage, it can be stated that the digital textbook for Introduction to Administrative and Management Science based on case study is feasible to be used in the teaching and learning process of the Introduction to Administrative and Management Science course. Student responses were carried out with a limited trial on 20 students of the Office Administration Education Study Program. The student response sheet consists of 6 components of eligibility, namely the format, relevance, attention, satisfaction, understanding of the material, and confidence in learning outcomes, where the overall assessment of students obtained an average eligibility result of 86.66% which can be interpreted that the digital textbook Introduction to Administrative Science and Management based on case studies is feasible and interesting to use in the learning process of the Introduction to Administrative Science and Management course.*

**Keywords** development, digital teaching materials, case study

### 1. INTRODUCTION

The new education pattern in the 21st century requires current education to adapt to the development of the era, where education must be able to dedicate human resources globally in welcoming a new civilization. The form of implementation is through the use of technology, and the strategic policy framework for 21st century education, as well as the establishment of an education renewal scheme towards universal competition, marked by Artificial Intelligence and E-Learning. Various developments of digital platforms that support the teaching and learning process such as the development of the SiDIA (Sinau Digital Unesa) or SPADA (Indonesian Online Learning System) digital platforms make the demand for the development of teaching materials can no longer be ignored. The development of these teaching materials is also inseparable from the needs of students. One way to make teaching materials interesting and also in accordance with demands is to use digital teaching materials as a source of learning for students so that the teaching materials used can accommodate the demands of current

learning, which are mostly focused on online learning. Currently, digital teaching materials are needed to support the learning process on campus.

The information conveyed will be easier to access and use if the teaching materials are made digitally or electronically. When and wherever the material can be read and studied by students more easily, so that distance and time are no longer obstacles in studying lecture materials. Almost all campus activities have used technology to facilitate the learning process. The use of technology in the learning process is expected to improve the quality of education in Indonesia, where the use of this technology will make it easier for students to find the information they need, complete assignments given by lecturers, and increase students' interest in learning. The use of technology can also help lecturers in the learning process, so that learning activities are not monotonous.

For this reason, lecturers must be more creative and innovative in utilizing technology to create interesting teaching materials in delivering lecture materials to students. This is in line with research conducted by Farhana, Suryadi, and Wicaksono, (2021) which states that digital-based learning that researchers develop will be valid and practical digital teaching materials used in learning English subjects. The results of research Aminuddin, Nurhikmah, and Haling (2021) revealed that learning using e-modules is effective as one of the teaching materials for e-modules for economics for class X. The results of research Suherja, Winarni, and Koto (2022) also stated that e-books are very suitable for use in PJJ because e-books are practical and can be carried anywhere because e-books can be stored on Android phones or laptops. When studying using e-books, students actively participate in group discussions, actively participate in problem-solving activities related to the students' residential environment

## **2. LITERATURE REVIEW**

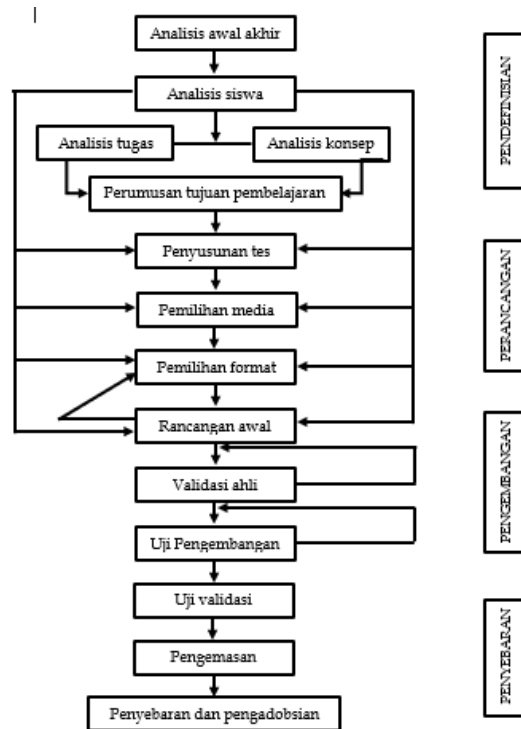
### **Digital Teaching Materials**

The development of teaching materials is usually inseparable from the needs of students. One way to make teaching materials interesting is by using digital teaching materials as a source of learning for students. Teaching materials that are arranged systematically can make it easier for students to understand learning materials and improve the quality of good knowledge for students (Asrial et al., 2020; Noroozi et al., 2017; Sitorus et al., 2019). The use of technology can support the development of digital-based teaching materials. Kosasih (2021) said that digital teaching materials are computer-based teaching materials and are equipped with other multimedia devices. Called multimedia devices, because they can combine two or more media, namely text, images, animations, videos, audio and others. In line with what was

expressed by Prastowo in (Sunarti, and Rusilowati, 2020) that digital teaching materials are teaching materials that combine several learning media such as audio, video, text or graphics to control a command from a presentation. In addition, digital teaching materials are also a book that is displayed in digital form and is able to provide an attractive appearance because it is equipped with text, images, sound, animation and video (Mastroleo et al., 2020; Tambunan et al., 2020). Digital teaching materials can be used as a medium of communication between teachers and students in online and offline learning processes. Digital teaching materials or often called e-books are books that are displayed in electronic form that can be accessed via smartphones and computers or laptops (Asrial et al., 2020; Sitorus et al., 2019; Nisa et al., 2020). Types of teaching materials include handouts, books, modules, radio, videos or films and interactive multimedia. From this explanation, it can be concluded that digital teaching materials are a set of learning materials that have been systematically arranged and displayed via digital devices, such as computers, laptops, tablets, cellphones, notebooks, and the like.

### **Case Study**

Case study is one of the methods that is in accordance with the independent learning program of the independent campus rolled out by the Indonesian government. The case study learning method according to Schröter et al (2022) is a participatory, discussion-based learning method where students gain skills in critical thinking, communication, and group dynamics. Based on this, this method is built with the hope of being able to make students' abilities more effective and develop in facing challenges in real-world problems by finding the right solutions. This definition is also in line with that expressed by Günther et al (2019) that the learning method by linking various cases in the material can make learning more effective and interesting. The same thing was conveyed by Fauzi et al (2023) who stated that the case-based learning method gives students the opportunity to walk around the problem and to see various perspectives so that they can remain active and be able to think creatively and critically when discussing cases with events in real life. In line with this, Ririen (2023) also stated that the case-based learning method can train communication and critical thinking skills that can be developed at each meeting in the teaching and learning process. So that the final abilities trained in problem-based learning can help apply the character values of students and also train their rationality in facing or assessing a problem Hamiyati et al (2022). Therefore, it can be concluded that the case study learning method is a method that can be used by lecturers to expand and develop students' knowledge and thinking skills in solving problems faced according to the courses being studied.



Gambar 3.1 Tahap Pengembangan Model 4-D  
Sumber: Diadaptasi dari Al-Tabany (2014: 233)

### 3. METHODS

The type of research uses the research and development method (Research and Development) which is a research method used to produce a particular product, and test the effectiveness of the product. This research model uses the 4-D model adapted from Thiagarajan, Semmel, and Semmel which consists of the Define, Design, Develop, and Disseminate stages. The selection of the 4-D development model was made because the stages in this model are in accordance with the development stages carried out in this study and each stage of development is explained in more detail and coherently. The development stage carried out in this study only reaches the Develop stage, because this study does not measure the effectiveness of the product or student learning outcomes. The following are the stages of the 4-D model development that will be carried out in the study:

The research instrument used in this study is a textbook validation sheet. The validation sheet is used to measure the validity of the textbook developed before the limited trial. Validation consists of three, namely material validation, graphic validation, and language validation. The data analysis technique used in this study is to analyze data obtained from the results of validation by material experts, graphic experts, and language experts.

### 3. RESULTS

Based on data analysis, the results and discussion can be shown as follows:

Feasibility of Digital Textbook Introduction to Administrative and Management Science Based on Case Study. The feasibility of the digital textbook Introduction to Administrative and Management Science based on case study that has been developed by researchers can be seen from the results of validation calculations by material experts, language experts, and graphic experts. This assessment is obtained from the validation sheet given to the experts using a Likert scale calculation. The following is a recap of the percentage results of the textbook's feasibility by the validator which can be seen in table 1 as follows:

**Table : Results of Expert Validator Recapitulation**

Validator	Result Validator in percentage	Eligibility Criteria
Graphic Expert	90%	Highly Worthy
Material Expert	83%	Highly Worthy
Material Expert	89%	Highly Worthy

Source : Processed by Researchers 2024

Based on table 1, the recapitulation of the results of the eligibility of the digital textbook Introduction to Administrative and Management Science based on case studies by the validator shows that the eligibility of the material in terms of the components of content eligibility and presentation eligibility obtained a percentage of 90% with the criteria of very feasible. Overall, the eligibility component of the material obtained a total score of 123 out of a maximum score of 135, so it can be concluded that the eligibility of the digital textbook material Introduction to Administrative and Management Science based on case studies developed in this study is very feasible and can be used with minor revisions. This shows that in terms of material it has covered everything and is in accordance with the applicable RPS.

Linguists assess that the textbook developed in terms of language is also very feasible, as evidenced by the component of language eligibility obtaining a total score of 58 out of a maximum score of 70 or 83% in the very feasible category. This can be interpreted that in terms of language, this textbook is very feasible to be used in the learning process with minor revisions. This shows that in terms of language, this textbook has met the rules of Indonesian language writing and is also in accordance with the level of development and characteristics of students. Graphic experts assessed the developed textbook in terms of graphic feasibility components also obtained a total score of 71 out of a maximum score of 80 or 89% with a very

feasible category. So for the graphic feasibility component, this textbook can be said to be very feasible and can be used with a little revision. So overall, from the assessment of the validator, material experts, language experts and graphic experts, the average percentage obtained was 87.33%, the digital textbook Introduction to Administration and Management based on case studies that was developed was very feasible and can be used in the learning process.

This study is in line with the study conducted by Taufiqurrahman (2022), where electronic teaching materials are feasible to use because they can improve students' problem-solving abilities. Similar research was conducted by Uki and Bire (2021) which showed that the developed teaching materials were valid, practical and effective for use in the learning process. Research Septia et al (2024) also stated that the development of interactive e-modules based on case studies is feasible, practical and effective for use in learning.

#### Student Response to the Development of a Digital Textbook of Introduction to Administrative and Management Science Based on Case Study

After conducting the validation process to determine the feasibility of the digital textbook of Introduction to Administrative and Management Science based on a case study, a limited trial was then conducted to determine the student response to the textbook that was developed. This limited trial was conducted on 20 students of the 2022 class of office administration education undergraduate study program. In accordance with the opinion of Sadiman, et al. (2014) who stated that to evaluate the developed product, 10-20 students are needed to represent the target population. The results of the limited trial through a questionnaire of student responses to the digital textbook of Introduction to Administrative and Management Science based on a case study can be seen in table 2 as follows:

**Tabel 2 Recapitulation of Student Response Results**

No	Component	Percentage	Criteria
1	Format	85%	Highly Worthy
2	Relevance	90%	Highly Worthy
3	Attention	90%	Highly Worthy
4	Satisfaction	85%	Highly Worthy
5	Understanding of Material	85%	Highly Worthy
6	Self-Confidence	85%	Highly Worthy

<b>Average</b>	<b>86,66%</b>	<b>Highly Worthy</b>
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Source : Processed by Researchers 2024

Based on table 2 above, the student response sheet consists of six components of textbook eligibility, namely format, relevance, attention, satisfaction, understanding of the material, and confidence in learning outcomes. Based on the data that has been processed by the researcher, the average score for all components was 86.66% with a very feasible category. So it can be concluded that the digital textbook *Introduction to Administrative and Management Science* based on case studies that was developed is very good and very interesting to use in the learning process in the *Introduction to Administrative and Management Science* course in the Unesa Office Administration Education Undergraduate Study Program. This study is in line with the research conducted by Aulia et al (2022) which received a good response regarding e-modules as digital teaching materials. Similar research was conducted by Nurlaelah et al (2023) which showed a positive response regarding digital teaching materials for hybrid learning. Research Diantari et al (2024) also showed a good response regarding digital teaching materials that can be used as teaching and learning guidelines.

#### **4. DISCUSSION**

This study aimed to assess the feasibility of the digital textbook *Introduction to Administrative and Management Science Based on Case Study* through the validation of material, language, and graphic experts, followed by a limited trial with students. The findings suggest that the developed digital textbook is highly feasible for use in the learning process, with minor revisions.

##### **Feasibility of the Digital Textbook**

Based on the expert validation, the digital textbook received highly favorable assessments across all components, with material experts providing a score of 83-89%, language experts 83%, and graphic experts 89%. These scores indicate that the content, language, and design components of the textbook meet the standards for effective learning materials. The total average of these assessments reached 87.33%, placing the textbook in the “very feasible” category. The material, in particular, was rated as very feasible with a 90% score, showing that it aligns well with the course syllabus (RPS) and is suitable for students' academic development.

The language component also met the criteria for high feasibility, scoring 83%. This demonstrates that the textbook adheres to the rules of Indonesian language usage, is appropriate for students' level of understanding, and is written in a way that facilitates comprehension.

Similarly, the graphic design of the textbook was also rated highly (89%), suggesting that the visual elements are both engaging and supportive of the learning experience.

These results are consistent with previous studies that emphasized the importance of well-developed digital teaching materials. Taufiqurrahman (2022) found that electronic teaching materials were effective in improving students' problem-solving abilities, while Uki and Bire (2021) highlighted that the teaching materials they developed were valid, practical, and effective for use in the learning process. In addition, research by Septia et al. (2024) on interactive e-modules based on case studies similarly concluded that such materials are feasible, practical, and effective for student engagement.

### **Student Response to the Digital Textbook**

Following expert validation, a limited trial was conducted with 20 students from the 2022 class of the Office Administration Education undergraduate program at Unesa. The results from the student response survey showed an average score of 86.66%, with ratings of “highly worthy” across all six components assessed: format, relevance, attention, satisfaction, understanding of the material, and self-confidence. The highest score was for relevance (90%), which indicates that students find the textbook directly applicable to their learning needs, while components related to attention, satisfaction, and understanding of material were all rated highly (85-90%).

These results affirm the textbook's positive reception among students, indicating that it is not only a useful tool for learning but also engaging and relevant. This is in line with Aulia et al. (2022), who reported positive student responses to e-modules as digital teaching materials. Likewise, research by Nurlaelah et al. (2023) and Diantari et al. (2024) demonstrated strong student approval of digital teaching materials in hybrid learning settings, further supporting the findings of this study.

### **Implications and Conclusion**

The findings of this study suggest that the digital textbook *Introduction to Administrative and Management Science Based on Case Study* is a valuable educational resource for the Office Administration Education undergraduate program at Unesa. The textbook's high feasibility scores from both experts and students indicate its potential to enhance the learning experience in the course. Minor revisions based on feedback can further optimize its effectiveness.

This study contributes to the growing body of literature supporting the use of digital teaching materials, especially case study-based resources, in higher education. The positive response from both experts and students highlights the potential of digital textbooks to engage



students, improve learning outcomes, and align with curriculum objectives. Future research could explore the long-term impact of such digital resources on student performance and engagement across various disciplines.

## **5. CONCLUSION**

Based on the results of the research and discussion, it can be concluded that the development of a digital textbook Introduction to Administrative and Management Science based on a case study developed using the 4-D development model by Thiagarajan, which includes four stages, namely the definition stage (define), design (design), development (develop), and dissemination (disseminate). However, this dissemination stage was not carried out because this study did not measure the effectiveness of the product or student learning outcomes. The feasibility of the developed textbook was determined based on an assessment by material, language, and graphic validation experts. From the overall assessment of the validation experts, an average result of the feasibility of the textbook was 87.33% with a very feasible category. Based on this percentage, it can be stated that the digital textbook Introduction to Administrative and Management Science based on a case study is feasible for use in the teaching and learning process of the Introduction to Administrative and Management Science course. Student responses were carried out with a limited trial on 20 students of the Office Administration Education Study Program. The student response sheet consists of 6 components of eligibility, namely the format, relevance, attention, satisfaction, understanding of the material, and confidence in learning outcomes, where the overall assessment of students obtained an average eligibility result of 86.66% which can be interpreted that the digital textbook Introduction to Administrative Science and Management based on case studies is feasible and interesting to use in the learning process of the Introduction to Administrative Science and Management course.

## **LIMITATION**

The case studies used in the development of this digital teaching material are limited to cases relevant to the science of administration and management at the introductory level. The case studies are selected from literature or publicly accessible sources, so they may not cover the entire spectrum of problems that can occur in real practice. The development of this teaching material is designed for use by early-level or beginner students who are new to the basic concepts of administration and management. This material may be less relevant for advanced students or professionals with work experience.

The development of this teaching material is only optimized for certain platforms, such as a web-based Learning Management System (LMS). Adaptation to other formats or platforms, such as mobile or offline applications, requires additional adjustments. The trial of the effectiveness of the digital teaching material was conducted on a small scale, limited to one educational institution. The results of this trial may not fully represent the various conditions in other institutions with differences in culture, technological facilities, and student ability levels. This study assumes that users have adequate access to hardware (computers, tablets, or smartphones) and a stable internet connection.

This study has not addressed the constraints of technology access in areas with limited infrastructure. The teaching material developed uses a case study-based approach with the assumption that this method is suitable for all students. However, the effectiveness of this approach may vary depending on the individual's learning style. Only covers basic concepts of administration and management science, such as management functions (planning, organizing, actuating, controlling). Complex or advanced issues in administration and management are not included in the scope of this study. The time available for the development and testing of this digital teaching material is limited, so the development of additional features such as gamification or personalization of the learning experience cannot be done.

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