E-BOOK MEDIA TRENDS IN THE LEARNING PROCESS AT SCHOOL

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Abstract. E-books are digital teaching materials that can be integrated with various multimedia, including images, videos, animations or manipulative media. For the next e-book development process, data and information on what kind of e-book and what media have been integrated are needed. For this reason, a Systemic Literature Review (SLR) was conducted which examined what and how e-books were researched. This research uses PRISMA (Preferred Reporting Items for Systemic and Meta-Analysis) guidelines, by searching for scopus indexed articles in the 2019-2023 range involving a total of 193 articles. After the screening process, 14 articles were obtained which were then analyzed in accordance with the Research Question (RQ) that had been formulated. From the results of the study based on two RQs, it was found that (1) the most research design that examines e-books is design/development research; (2) the least integrated aspect in e-books is animation/manipulative media. These results have limitations in terms of the scope of data sources and the depth of study on the material discussed. So this research provides opportunities for further researchers both in development design and SLR.

INTRODUCTION

Education 4.0 is one part of the development of the Industrial Revolution 4.0 in Indonesia. The impact of the development of education 4.0 is the development of technology-based education (Abdurrahman et al., 2018). The development of technology that is increasingly advanced, of course, affects various sectors of human life. This development also plays a role in the development of learning media. Learning media is becoming more interesting and more concise even though it does not reduce the essence of the material (Nariana, 2020). One of the developments in learning media that is currently new is learning media using e-books. Educational technology as theory and practice in the design, development, management and evaluation of learning processes and resources. E-book is a learning resource that utilizes information technology in its development. E-books have many

advantages compared to conventional books. One of the advantages of e-books is a good level of flexibility, where its use can be done anywhere and anytime. In addition, the use of e-books can increase innovative thinking, practical information acquisition, student creativity and learning motivation (Budiman et al., 2021 & Radović et al., 2020). The change in the learning paradigm from teacher-centered learning to student-centered learning is one of the important efforts to optimize the learning process that can foster learners to be active learners. This change is reflected in the process of learning activities that become the high responsibility of learners for their own learning. Dimyanti & Mujiono (2006) explain that in a learning activity, learning activities can be said to occur if there is a process of behavior change in the learner as a result of an experience. Uno (2008) explains that learners who learn must play an active role (subject) to form knowledge.

Learning is a process of change that occurs through practice and experience so as to acquire measurable abilities and skills (Nariana, 2020). Learning theory is an effort made to provide an overview of how humans learn things so as to get a view of the complex and inherent evaluation process. E-books can be varied by integrating images, learning videos, animations, and other manipulative learning media such as Augmented Reality (AR). Learning videos are not only related to material explanations, but can also be integrated with videos of real phenomena related to the material being discussed (Sri Wahyuni, 2021). In addition, e-books can also be integrated with manipulative media such as AR. AR is one of the media that can display 3D animation. For Mathematics material known to have a high level of abstractness, AR media is considered capable of providing real simulations.

Therefore, the purpose of this research is to determine what types of digital books have been applied to local content learning. Through this systematic literature review, this study aims to identify different types of e-books that provide answers to the following questions.
RQ1: What research methods were used?
RQ2: What is the content trend of the e-book media studied in recent years?

METHODS
This study used the Preferred Reporting Items for Systemic and Meta-Analysis (PRISMA; Moher, 2009) guidelines. These guidelines include SLR steps, such as describing clear criteria, information sources, search strategies for the selection process and analysis of search results. The search process was carried out with the help of the Publish or Perish application by searching for scopus indexed articles from 2019-2023. The keywords used in the article search process include "E-book".

Table 1. Summary of E-book Statistics

Description	Results
Jangka Waktu	2019-2023
Sumber Jurnal	193
Jurnal 2019	620
Jurnal 2020	18
Jurnal 2021	217
Jurnal 2022	6
Jurnal 2023	5

Image 1. Summary of E-book Statistics

The table above shows the search results after being filtered in excel for the topic of the article obtained as many as 193 articles, and for the keyword "E-book as a learning medium" there are 113 articles. The selection criteria of the articles obtained are very much needed to maintain the eligibility of an article. The inclusion criteria required are as follows, (1) published in English; and (2) clearly describe the type of e-book used/developed. While the required exclusion criteria are (1) the method used is not clearly described; (2) is preliminary research from another study; (3) the e-book used/developed is not an e-book; (4) the article obtained is incomplete; (5) not published in English.

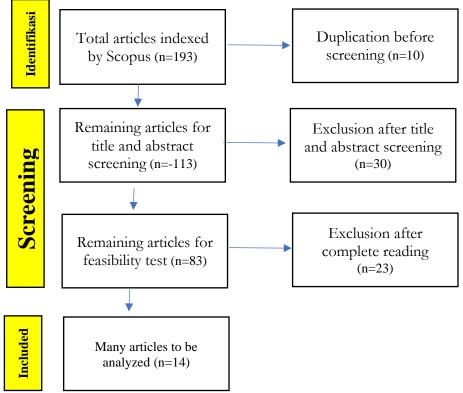A diagram of the article selection process is shown in the image below.

Image 2. Diagram of The Search and Selection Process

RESULTS AND DISCUSSION

The number of articles identified as being indexed by Scopus was (n=193). In the first stage, duplication was checked on the identified articles, which resulted in the exclusion of (n=80). So that the number of articles remaining for title and abstract screening is (n = 113). Exclusions after screening titles and abstracts were (n=30) and 83 articles remained for feasibility testing by reading the entire content of the article. The exclusion of the feasibility test reduced the number of articles by 23. So the number of articles analyzed was 14.

RQ1: What are the research methods used?

The first tested problem formulation is about the most used research design in the 2019-2023 time span, which is related to the use/development of e-books. Of the 14 articles that were output from the screening process, the results of the analysis regarding the research designs used can be presented as follows.

Table 2. Recap of Research Design

No	Research Design	Source
1	Qualitative	(kucirkova, 2021), (Ismail, 2021). (Yasa, 2021), (Bus, 2020), (Sawitri, 2021)
2	Experiment	(Siano, 2022), (Choi, 2020)
3	Design/development	(Budiman, 2021), (Saripudin, 2022), (Faizah, 2022), (Setiyani, 2022), (Setianingrum et al., 2023), (Lee, 2023)
4	Meta analysis	(Wijaya, 2022)

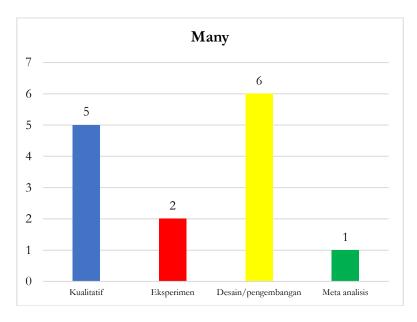Visually, the results in the table above are presented in the diagram below.

Image 3. Scatter Diagram of The Research Design

From the results in table 1 and image 3 above, it can be seen that 35.71% is qualitative research, 14.29% is experimental research, 42.86% is design/development research and 7.14% is meta-analysis research. The most common type of research conducted in relation to e-books is design/development research. This means that there are quite a lot of design/development research related to e-books with their respective qualities.

RQ2: What are the content trends of the e-book media studied over the years?

The second problem formulation is about the aspects integrated in the e-book. Aspects that can be integrated are text, images/tables/photos/diagrams, videos, and animation/manipulative media. In an e-book, one or even all four aspects can be integrated.

Table 3. Recap of Aspects Integrated in The E-book

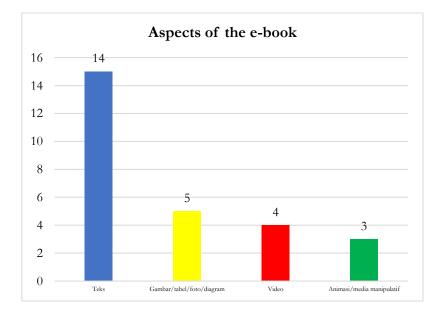| No	Aspects in the book	Description	Source
1	Text	E-books that only contain text material	(Faizah, 2022), (Setiyani, 2022), (Fitriani, 2021), (Wijaya, 2022)
2	Images/tables/photos/diagrams	E-books equipped with images/tables/photos/diagrams of phenomena related to the concepts being discussed.	(Saripudin, 2022), (Ismail, 2021), (Faizah, 2022),
3	Video	E-books equipped with videos, either learning videos that contain explanations of concepts or videos of phenomena that occur	(Budiman, 2021), (Awaludin, 2020), (Fitriani, 2021), (Siano, 2022),
4	Animations/manipulative media	E-books that are equipped with media both in the form of animation and manipulative media	(Wijaya, 2022), (Awaludin, 2020), (Setianingrum et al., 2023), (Lee, 2023)

Image 4. Aspects of the e-book under study

From table 3 and image 4 above, it can be concluded that the most researched aspect is text. Text is the dominant aspect for an e-book, so all articles used in this SLR are categorized as containing text aspects. Meanwhile, the least aspect integrated in the e-book is animation/manipulative media.
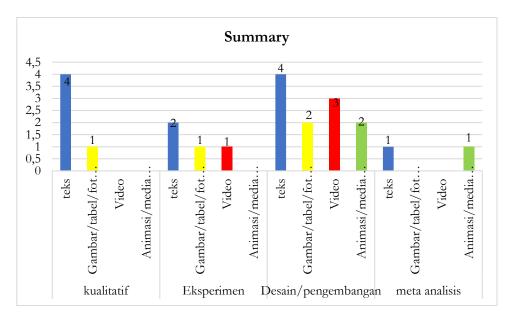
E-book is a learning resource that utilizes information technology in its development. E-books have many advantages compared to conventional books. One of the advantages of e-books is a good level of flexibility, where its use can be done anywhere and anytime. In addition, the use of e-books can increase innovative thinking, practical information acquisition, student creativity and learning motivation (Radovic, 2020; Budiman, 2021). One of the manipulative media that can be integrated in e-books is augmented reality (AR).

Research on AR has been conducted with positive results. The use of AR media provides an experience for students who are able to visualize the abstract aspects of a concept (Faridi, 2020). Furthermore, learning with AR can also make a positive contribution to students' ability in modeling skills (Cahyono, 2020). Specifically on the topic of geometry, learning with AR contributes and novelty of geometry learning (Hanid, 2022).

Judging from the above formulation, we can analyze the two problem formulations can be summarized as presented in the table below.

Table 4. Summary of Research Design and Types of Books Studied

No	Research Design	Aspects of the book	Source
1	Qualitative	Text	(kucirkova, 2021), (Ismail, 2021). (Yasa, 2021), (Bus, 2020), (Sawitri, 2021)
		Pictures/tables/photos/diagrams	(Ismail, 2021)
		Video	
		Animations/manipulative media	
2	Experiment	Text	(Siano, 2022), (Choi, 2020)
		Pictures/tables/photos/diagrams	(Choi, 2020)
		Video	(Siano, 2022)
		Animations/manipulative media	
3	Design/development	Text	(Budiman, 2021), (Riyanto, 2020), (Saripudin, 2022), (Faizah, 2022), (Setiyani, 2022), (Awaludin, 2020), (Fitriani, 2021)
		Pictures/tables/photos/diagrams	(Budiman, 2021), (Saripudin, 2022), (Faizah, 2022)
		Video	(Budiman, 2021), (Awaludin, 2020), (Fitriani, 2021)
		Animations/manipulative media	(Riyanto, 2020), (Awaludin, 2020)
4	Meta analysis	Teks	(Wijaya, 2022)
		Pictures/tables/photos/diagrams	
		Video	
		Animations/manipulative media	(Wijaya, 2022)

Visually, the results in table 4 above can be presented as image 5 below.

Image 5. Summary Diagram of Research Design and Types of Books Studied

From the summary results in Table 4 and Image 5, it can be concluded that for each research design is still dominated by text. It may be natural for text to be the dominant aspect in the e-books studied, because text is the main element in a book. However, if you look deeper, the animation element is still minimally used in e-books for each research design.

CONCLUSION
This SLR research reveals what and how e-books are researched. From the analysis of 14 articles that have passed the screening process, the results show that the most common research design that examines e-books is design/development research. The aspects integrated in e-books are still dominated by text, and quite a few integrate animation or manipulative media in the books studied. This result is certainly an asset in research, especially those that focus on researching e-books.

Suggestions that can be given by researchers after carrying out research are research on e-books as a medium in the learning process at school can be further improved in researching. For students, learning interest and learning motivation towards learning outcomes increase in using e-books and provide motivation to students in learning which in turn can foster student interest and motivation to learn and always familiarize themselves with learning media, and teachers are expected to use a variety of methods in learning, using learning media as optimally as possible in e-books.

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