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DEVELOPMENT OF MIND MAPPING BASED POCKETBOOK AS A LEARNING MEDIA FOR ACCOUNTING SERVICES

PENGEMBANGAN POCKETBOOK BERBASIS MIND MAPPING SEBAGAI MEDIA PEMBELAJARAN JASA AKUNTANSI

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Abstract

The pocket book is small so it's practical. Students can use it to study anytime and anywhere. The concept of mind mapping presented with colour images can stimulate the brain's performance to make it easier to understand the material. This study aims to develop a mind mapping-based pocket book on accounting materials for service companies. The development model used is the 4D Thiagarajan model, which starts from the definition, design, development, and deployment stages. The validity test of six validators who are experts in their fields shows valid results. The material expert's assessment is in the very good category. The media expert's assessment got a fairly good category, and the linguist's assessment got a very good category. The practicality test involving 20 randomly selected respondents showed practical results. Based on the results of the assessment with predetermined criteria, it can be concluded that a pocket book based on mind mapping in service company accounting materials is said to be suitable for use as a learning medium.

Keywords: Development Research; Learning Media; Pocket Book; Mind Mapping; Service Company Accounting

Abstrak

Buku saku berukuran kecil sehingga praktis. Siswa dapat memanfaatkannya untuk belajar kapan saja dan dimana saja. Konsep mind mapping yang disajikan dengan gambar berwarna mampu merangsang kinerja otak agar lebih mudah memahami materi. Penelitian ini bertujuan untuk mengembangkan buku saku berbasis mind mapping pada materi akuntansi Perusahaan Jasa. Model pengembangan yang digunakan adalah model 4D Thiagarajan, yang dimulai dari tahap pendefinisian, perancangan, pengembangan, dan penyebaran. Uji validitas dari enam validator yang ahli di bidangnya menunjukkan hasil valid. Adapun penilaian ahli materi berada pada kategori sangat baik. Penilaian ahli media mendapat kategori cukup baik, dan penilaian ahli bahasa mendapat kategori sangat baik. Uji kepraktisan yang melibatkan 20 responden yang diambil secara acak menunjukkan hasil praktis. Berdasarkan hasil penilaian dengan kriteria yang telah ditentukan maka dapat disimpulkan bahwa buku saku berbasis mind mapping pada materi akuntansi perusahaan jasa dikatakan layak digunakan sebagai media pembelajaran.

Kata kunci: *Penelitian Pengembangan; Media Pembelajaran; Buku Saku; Peta Pikiran; Akuntansi Perusahaan Jasa*

INTRODUCTION

Accounting is a system for processing information that starts with the process of identifying, recording, and communicating an economic event that occurs in an organization and is addressed to interested users (Izzati & Sumarsih, 2017). According to students, accounting lessons are included in one of the subjects included in the difficult category (Agustini, 2021) because it takes precision and accuracy when doing it. Also, accounting subjects have a reasonably broad material scope. Therefore, the use of attractive learning media is vital so that learning students do not get bored quickly and feel comfortable when learning.

Learning media is a means to convey messages to students in order to stimulate students' thinking, emotions, and interest in the learning process (Rosanaya & Fitrayati, 2021). The main function of learning media is to streamline the achievement of learning objectives in the learning process (Nasrulloh et al., 2017). Learning media is needed to convey messages to students because not all learning experiences can be obtained directly (Siswanto et al., 2021). The forms of learning media are very diverse, so that the selection of the right media must pay attention to the learning objectives and characteristics of the media itself (Nasrulloh et al., 2017).

SMA 1 Badegan is one of the schools that teaches accounting to students majoring in social sciences. When conducting initial observations, the researcher found that the learning media used were very limited. The teacher uses a large, heavy and thick main reference book. The book is written in long sentences. Consequently, students are less interested in reading or studying the contents of the book. Therefore, researchers want to focus on developing learning media in pocketbooks or pocketbooks that are practical and comfortable. A pocketbook is a textbook with a small and light size that is practical, easy to store in a pocket, easy to read everywhere, and can be carried anywhere (Agustien & Listiadi, 2014).

The use of pocket books makes it easier for students to obtain information without wasting a long time to catch the point (Agustien & Listiadi, 2014). Pocket books are presented in full color so that learning accounting feels fun (Qurrota'aini & Sukirno, 2013). The development of a pocket book uses the concept of mind mapping so that it can be presented concisely but easily memorized and understood by students. Understanding the concept is an important aspect in learning service accounting because it is the basis for the next stage. The use of pocket books that are adapted to the characteristics of students makes it easier to understand accounting material that is considered difficult so that in the end they are able to motivate them (Fahma et al., 2018)

Mind maps are a method of mapping our ideas by providing easy-to-remember keywords in the form of numbers, colors, and designs that are attractive, effective, efficient, creative, easy to remember and useful (Swadarma, 2013). Mind maps can store information, organize information into an orderly unit, prioritize, learn to understand information in its context, review a subject matter, and remember complete information (Purwanti & Ahmad, 2016). The use of mind mapping presents a basic accounting conceptualization in a compact, concise and easy to understand manner. This is very useful for students when learning online where students have difficulty due to network limitations, quotas and limited interaction with friends. On the other hand, when it comes to learning from books, accounting materials are quite large, heavy and expensive (Ningsih et al., 2021). In addition to accounting conceptualization, this pocket book also presents questions and simulation exercises at the end of the book. Because accounting requires a combination of good conceptual understanding, good numeracy skills and application skills in real case studies (Putra & Nugroho, 2016).

METHODS

The type of research used in this research is research and development or often called Research and Development. The development model used is the 4D model from Thiagarajan (1974),

starting from the Define, Design, Development, and Disseminate stages. However, this research is only limited to the definition stage to the development stage.

Defining Stage (Define)

The definition stage is the initial stage carried out by researchers in collecting data. Data were obtained from observations of teachers and students as well as teaching and learning conditions including the facilities and infrastructure found in the classroom environment. At the defining stage, the researcher conducts a needs analysis research in which there are several aspects including the curriculum used in schools, school environmental conditions, learning resources used by students, learning media used by teachers, learning conditions that occur in the classroom, and student enthusiasm for accounting subjects.

Stage of Design (Design)

In the design stage, the researcher makes the initial product based on the data obtained at the definition stage. At this stage, it is filled with activities to prepare a conceptual framework of models and learning tools such as subject matter, media, and instruments for evaluation to become a learning media in the form of a mind mapping-based pocket book. In the design stage itself, there are steps that must be met in order to produce a product that is suitable for use. These steps include:

a. Instrumental arrangement

The preparation of the instrument is carried out by adjusting the specifications of the learning objectives with the needs of students. This instrument is used with the aim of measuring the influence of students after using learning media in the form of a mind mapping pocket book. Researchers carry out these measurements of course using sheets as research instruments including:

1) Media Validation Sheet
2) Student Response Questionnaire Sheet

b. Selection of Learning Media

In the definition stage, of course, there is also the selection of learning media. Where researchers will analyze and formulate what learning media are in accordance with the curriculum, learning materials and student needs. The researcher decided to choose a mind mapping-based pocket book learning media which will be developed to add student learning references.

c. Initial Design of Learning Media

After selecting the media to be developed, the researcher enters the initial product design stage. Researchers create a framework regarding the product being developed which includes indicators, basic competencies, core competencies, and a summary of the material. Researchers developed a mind mapping-based pocket book on accounting subjects, but researchers only developed media in the accounting sub-chapter of service companies.

Development Phase (Development)

The next stage is the development stage. At this stage the researcher has completed the product in the form of print media that will be used as a learning medium. Prior to the media trial, the researcher appointed several teams of experts to assess the feasibility of the learning media. The steps in the development stage are:

a. Design Validation

Design validation is an assessment process carried out by a media expert who is a lecturer who is an expert in the field of information technology, and a material expert consisting of an

accounting lecturer and a related school accounting teacher who is experienced in their field to assess the products developed. These experts are also given the authority to provide additional criticism and suggestions in order to determine the level of weaknesses and strengths of the product so that researchers have a reference to improve if there are deficiencies.

b. Revision Stage

After an assessment, of course, the product is not free from errors. The revision stage is carried out by researchers in order to improve what is being corrected by experts/experts. This is done until it meets the standard quality of the product and gets a proper predicate without revision from a team of experts/experts.

c. Limited Trial

Limited trials were carried out by researchers after the learning media had been declared valid by a team of experts. The limited trial was carried out by distributing pocket book media products to 25 students of class XI Ips SMA Negeri 1 Badegan who were taken randomly. In addition, the researcher also gave an assessment questionnaire to students in which the questionnaire contained aspects that had to be filled out after they tried/use a mind mapping-based pocket book. As a result of the corona virus pandemic that has hit all countries including Indonesia, the government has imposed a lockdown policy, including at SMA Negeri 1 Badegan as an effort to break the ropes of spreading the virus. Students are given the opportunity to study at home until the specified time limit. Therefore, the researcher decided that the data collection stage was carried out online. The researcher created a whatsapp group consisting of students majoring in Social Sciences, then the researcher gave a product that had been tested by a team of experts. After the product is read and understood, a questionnaire is given to students via a google form. If students have finished filling out the questionnaire, the researcher asks for feedback from students by sending the questionnaire form automatically into the system.

Data analysis in this study, namely: analysis of the validity and analysis of learning media's practicality, this validation sheet uses assessment criteria based on a Likert scale. The aspects contained in the validation sheet given to experts cover several aspects. Each aspect has a score, namely: 5 scores which include a score of 1 state that it is not right, a score of 2 states that it is not right, a score of 3 states that it is quite good, a score of 4 states good, and a score of 5 which states very good.

The scores were then collected, measured, and presented to determine each team of experts' validity level. To measure the level of validity and practicality of the media, refer to the formula proposed in equation one 1 equation 2 (Alvionita et al., 2019).

$$V_a = \frac{\ell}{h} \times 100\% \quad \text{..... 1}$$

$$P = \frac{\ell}{h} \times 100\% \quad \text{..... 2}$$

Keterangan:

V : Percentage of Validity
V_a : Validation from experts
P : Practicality percentage
TSe : Total empirical score
TSh : Total expected score

The criteria for validity and practicality are presented in Table 1, which is based on the standard criteria put forward by Akbar (2013). If the validity and practicality test results get a score above 70.01%, then the learning media is said to be suitable for use.

Table1 Validity and Practicality

Criteria Validity	Level of Validity	Level of Practicality
85,01% – 100,00%	Very valid, can be used without revision	Very practical, can be used without revision
70,01% – 85,00%	Quite valid, can be used but needs revision	Quite practical, can be used but needs revision
50,01% – 70,00%	Less valid, it is recommended not to use it because it needs a significant revision.	Less practical, it is recommended not to use it because it needs a significant revision.
01,00% – 50,00%	Not valid, or may not be used.	Impractical, or may not be used.

Source: Akbar (2017)

FINDINGS AND DISCUSSION

Validation of learning media is carried out to determine the level of validity of learning media as assessed by the validator. The validator appointed by the researcher to test the feasibility of learning media consisted of 2 media experts, three material experts, namely one economics (accounting) teacher and two accounting lecturers, and one linguist. The six experts/experts have capability and credibility in their fields. Data collection techniques carried out by experts/experts are filling out a questionnaire or questionnaire, which includes aspects related to the learning media developed, including aspects of the truth of the material, aspects of the presentation component, and aspects of the language component. Also, before filling out a questionnaire, the validator is expected to provide suggestions to researchers on the material that needs to be improved in learning media development. Before the revision was made on the validator's advice, the pocketbook media received the assessment presented in Table 2.

Table 2 Validation by Material Experts Before Revision

Aspects	Tse	TSh	V	Final Validation
Clarity of Material	71	75	94,67%	91,56%
Serving Components	81	90	90,0%	
Language Components	54	60	90,0%	
Validity Criteria				**Quite Valid**

Suggestions given by material experts include
1. Adding practice questions for students as evaluation material,
2. Giving the words "moved" and "transferred" at the end of the general journal column,

3. Correcting sentences, sequences, and examples on basic concepts accounting for service companies,
4. Adding a broad understanding of "prive" to make it more complete,
5. Reviewing the calculations contained in the adjusting journal,
6. Improving the word "per" to "period ended" in the profit/loss statement,
7. Consistency in the use of terms needs to be improved,
8. Using language and coherent sentence structure in explaining definitions.

After reviewing the validator's suggestions, the researcher improved the learning media to get the values presented in Table 3.

Table 3 Validation by Material Experts After Revision

Aspects	Tse	TSh	V	Final Validation
Clarity of Material	73	75	97,3%	94,67%
Serving Components	84	90	93,3%	
Language Components	56	60	93,3%	
Validity Criteria				**Very Valid**

Based on Table 3, material experts' final validation analysis shows that mind mapping-based pocketbook learning media get a very valid category with a validation percentage of 94.67%. The pocketbook learning media is also tested by lecturers who are experts in the IT / visual field. The aspects used as assessment guidelines are writing display, image display, and media presentation. The results of the media expert's assessment are presented in Table 4.

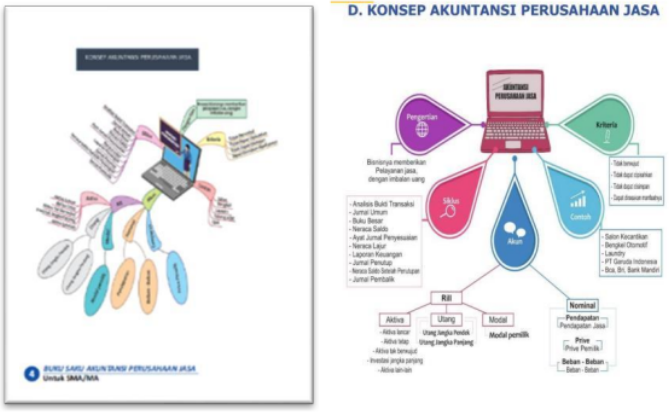
Table 4 Validation by Media Experts Before Revision

Aspects	TSe	TSh	V	Final Validation
Posts View	21	30	70,0%	76,7%
Image Display	37	50	74,0%	
Presentation of Media	34	40	85,0%	
Validity Criteria				**Quite Valid**

Suggestions given by media experts include:
1. Tidiness still needs to be improved such as the placement and size of the footer,
2. Consistency in choosing the size and type of font needs to be improved,
3. The selection of images needs to use high resolution to make it comfortable to see,
4. In terms of visual mind Mapping is recommended to use in 2D and use a combination of bright colors to attract learning interest.

After that, the media was repaired on the advice of the validator. One example of improving learning media is presented in Picture 1.

Before the Revision **After the Revision**



Picture 1 Display of Learning Media

Learning media are asked for re-evaluation after revision at several points, as suggested by media experts. The results of the assessment after the revision are presented in Table 6.

Table 6 Validation by Media Experts After Revision

Aspects	TSe	TSh	V	Final Validation
Posts View	24	30	80,0%	82,5%
Image Display	40	50	80,0%	
Presentation of Media	35	40	87,5%	
Validity Criteria				**Quite Valid**

Based on Table 6, it is known that mind mapping-based pocketbooks get quite valid categories with the final validation percentage of 82.5%. One competent linguist also tested the pocketbook learning media in Indonesian Language and Literature. A questionnaire sheet for linguists is a legibility component in which there are 10 statement items. Table 7 shows the results of the validity test conducted by linguists.

Table 7 Analysis of MediaValidation by Linguists

Aspects	Tse	TSh	V	Final Validation Percentage
Readability component	43	50	86,0%	86,0%
Validity Criteria				**Very Valid**

Suggestions from language experts include: 1) Eliminating the dot symbol (.) In writing, Rp. 2) The use of sentences is communicative, but not yet encouraging students to be active, 3) Improving the numbering sequence according to the derivative of numbering, 4) Consistency of the sequence of explanations (subtitles explanation-formula-format-description), 5) The use of the word "if ..., or" then. Table 7 shows that the pocketbook media gets a very valid category from linguists with a score of 86.0%. The three experts' questionnaire validation results before the revision were then added together to produce the percentage score presented in Table 8.

Table 8 Combined Validation of Validators Before Revision

Validator	TSe	TSh	V	Final Validation
I	67	75	89,3%	
II	75	75	100%	
III	65	75	86,7%	
IV	46	60	76,7%	80,58%
V	46	60	76,7%	
VI	43	50	86,0%	
Validity Criteria				**Very Valid**

Table 8 shows the very valid criteria for the assessment of instructional media carried out by six validators. However, there are some suggestions for improving learning media and re-testing the validity to produce the final validation percentage presented in table 9.

Table 9 Combined Validation of Validators After Revision

Validator	Tse	TSh	V	Final Validation Percentage
I	67	75	89,3%	
II	75	75	100%	
III	71	75	94,6%	
IV	46	60	76,7%	89,87%
V	53	60	88,3%	
VI	43	50	86,0%	
Validity Criteria				**Very Valid**

Based on the data in the Table 9, it shows that the mind mapping-based pocketbook learning media developed by the researcher got a percentage of 89.87% with validity criteria, which is very valid. Akbar (2013) states that learning media is declared valid if the combined validity score gets> 70%.

After the validity test has been completed, the next stage is the practicality test or limited trial conducted with class XI students majoring in Social Sciences at SMA Negeri 1 Badegan. The student response questionnaire used in this media development contains 12 negative statements and positive statements. The sheet was given to 25 students to provide an assessment of the practicality. The students were taken randomly. The test results showed that the percentage of practicality obtained a score of 78.33% with practicality criteria, which is quite practical.

$$P = \frac{e}{h} \times 100\%$$

$$P = \frac{1175}{1500} \times 100\%$$

$$= 78{,}33\%$$

Some digital learning platforms have developed audio-visual learning media. However, to access these learning resources, technology is adequate. Cannot be used in conditions of internet access in an unstable residential environment, limited technological devices owned, costs (Cilvia, 2021) The development of accounting media on computers also results in difficulty accessing

Android phones. If possible, an adequate office reader application is required(Saadah & Listiadi, 2021). For this reason, the teacher as a facilitator must provide appropriate facilities according to the characteristics of students so as to support the successful achievement of learning objectives(Octavina & Susanti, 2021). According to the characteristics and conditions of students at SMA 1 Badegan, the most likely media is a pocket book.

This research on the development of mind mapping-based pocketbook learning media is aimed at high school students majoring in social studies. This learning media reviews economic material (accounting), which focuses on the accounting chapter of service companies and is developed to make it easier for students to understand accounting concepts for beginners. In this media, there are also case questions and solutions to help students solve accounting calculations problems. This media is also equipped with practice questions for student evaluation related to the material that has been studied. This development research has met the validity and practicality criteria to indicate that the learning media is suitable for use.

Akbar (2013) states that learning media is declared valid if the combined validity score gets> 70%. The learning media developed by the researcher obtained the final validation percentage from 6 validators of 89.87% with very valid criteria. So the developed learning media can be used as a companion book on service company accounting learning materials. The questionnaire sheet used by the validator's assessment guide has several aspects. Each aspect obtains a percentage score, which is presented in table 9.

Table 10 Validation Analysis of Learning Media per Aspect

Rated aspect	Percentage	Criteria
Clarity of Material	97,3%	Very valid
Serving Components	93,3%	Very valid
Language Component	93,3%	Very valid
Posts View	80,0%	Quite valid
Image Display	80,0%	Quite valid
Presentation of Media	87,0%	Very valid
Readability Aspects	86,0%	Very valid

Wulandari et al. (2016) developed a Pocket Book of Natural Science Friends on the Sense of Hearing Material and Sonar Systems in SMP, getting very valid criteria a validator with a score of 81%. That results are in line with the development carried out by researchers by obtaining a validity percentage of 89.87%. Therefore, pocketbook media can be used in learning activities. Learning media is practical if the score obtained is at least 70.01% to 85%. Retno et al.2015) tried to apply the newsletter in a pocketbook as a learning medium for chemistry subjects. This research got a very practical category in the practicality test. Whereas in this study, the results of the student response questionnaire got a score of 78.33%. That results included in the criteria quite practical. The assessment of each aspect is presented in Table 11.

Table 11 Analysis of the Student Response Questionnaire by Aspect

Indicator	Percentage of Practicality	Criteria
Ease of learning and understanding of service company accounting material.	77,8%	Quite Practical
Application of learning media of the pocketbook based on mind mapping.	76,8%	Quite Practical
The learning media component of the pocketbook is based on mind mapping.	77,92%	Quite Practical

Based on Table 11, it can be concluded that students' responses to the learning media developed have criteria that are quite practical. The learning media that were distributed were not in the form of printed books, but rather pdf soft files which were distributed through social media. That condition because of the COVID 19 outbreak, which implements a home study policy to break the chain of spreading the virus. This policy has an impact on the level of effectiveness of research activities. Learning media testing should be carried out directly so that students know the product specifications developed by researchers. Besides that, researchers cannot directly monitor student development after using mind mapping-based pocketbook learning media.

CONCLUSION

The development of mind mapping-based pocketbook learning media fulfills the very valid category for validity testing and gets the category practical enough for practicality testing. Based on these results, a mind mapping-based pocketbook is suitable for use as a learning medium for service company accounting material at SMA Negeri 1 Badegan. However, testing this learning media is only limited to validity testing and practicality testing because the COVID 19 outbreak resulted in no learning taking place in schools. Hence, researchers only carried out the limited trial stage on students who were conducted online. The results of the development of pocket book-based learning media Mind mapping can be used as a reference, reference, and comparison, so that researchers can correct deficiencies in learning media by presenting different materials. Also, if the researcher wants to develop this learning media, the researcher can add a field trial stage, effectiveness test, or another test that can improve student learning quality to perfect this development determination.

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DEVELOPMENT OF MIND MAPPING BASED POCKETBOOK AS A LEARNING MEDIA FOR ACCOUNTING SERVICES

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★ Trimurtini Trimurtini, Mira Amalia Setyani, Elok Fariha Sari, Nursiwi Nugraheni. "Development of mind mapping-based comics to improve math learning outcomes", Premiere Educandum : Jurnal Pendidikan Dasar dan Pembelajaran, 2021

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