

Development of Android-Based Learning Media in the Characteristics of Trading Company Materials

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Abstract: The development of technology in the field of education provides opportunities in the use of android as a learning medium. Android is a device containing an operating system (open source) based on Linux which is widely used as a learning medium in the classroom to make the learning process more effective and efficient. This study aims to determine how the development of android-based learning media in the characteristics of trading company materials class XII IPS SMAN 6 Jambi City as an effort to meet the demands of the paradigm and how the level of feasibility of android-based learning media characteristics of trading company materials class XII IPS SMAN 6 Jambi City according to media experts, material experts, and students. This research was conducted at SMAN 6 Jambi City in April-May 2022. The development of android media uses the 4D (Define, Design, Develop, and Disseminate) method. The research data was obtained using observation questionnaires to teachers in the field of economic studies as well as students, media experts and material experts. The results showed that android-based learning media material characteristics of trading companies for class XII IPS SMAN 6 Jambi City based on the assessment of media experts, material experts, teachers, and students were declared eligible or valid by obtaining a score of 119 ("very good" category) by material experts; a score of 92 ("good" category) by media experts; and a score of 116 or an average percentage of 97% (category "very good") based on student response questionnaires. From the results of this study, it is suggested that: (1) Students can use their cellphones more often for learning activities compared to other entertainment activities; (2) Teachers can use android-based learning media more often if there are limitations of learning media provided by the school; (3) Schools can further equip innovative or technology-based learning media facilities for economic learning; and (4) other researchers can test the effectiveness of this media on learning.

Keywords: Android Media Development, Characteristics of Trading Companies

Abstrak: Penelitian ini bertujuan untuk mengetahui bagaimana pengembangan media pembelajaran berbasis android materi karakteristik perusahaan dagang kelas XII IPS SMAN 6 Kota Jambi sebagai upaya pemenuhan tuntutan paradigma serta bagaimana tingkat kelayakan media pembelajaran berbasis android materi karakteristik perusahaan dagang kelas XII IPS SMAN 6 Kota Jambi menurut ahli media, ahli materi, dan peserta didik. Penelitian ini dilakukan di SMAN 6 Kota Jambi pada April-Mei 2022. Data penelitian diperoleh dengan angket observasi terhadap guru bidang studi ekonomi serta siswa, memberikan lembar validasi kepada ahli media ahli materi dan menyebarkan angket respon siswa. Setelah itu masing-masing data dianalisis baik secara kualitatif ataupun kuantitatif. Hasil penelitian menunjukkan bahwa media android sebagai upaya pemenuhan tuntutan paradigma telah berhasil dikembangkan dengan mengadaptasi model pengembangan 4D Define (Pendefinisian), Design (Perancangan), Develop (Pengembangan) dan Disseminate (Penyebaran) menggunakan beberapa yakni; software Java Runtime Environment (JRE), Powerpoint, iSpring Suite, dan Website 2 APK Builder Pro. Untuk kelayakan media pembelajaran berbasis android materi karakteristik perusahaan dagang kelas XII IPS SMAN 6 Kota Jambi ahli media, ahli materi, guru, dan peserta didik dinyatakan layak atau valid dengan memperoleh skor 119 (kategori "sangat baik") oleh ahli materi; skor 92 (kategori "baik") oleh ahli media; dan skor 116 atau persentase rata-rata 97% (kategori "sangat

baik”) berdasarkan angket respon peserta didik. Dari hasil penelitian ini disarankan agar: (1) Peserta didik dapat lebih sering memanfaatkan handphone yang dipunyai untuk kegiatan pembelajaran dibandingkan kegiatan hiburan lainnya; (2) Guru dapat lebih sering memanfaatkan media pembelajaran berbasis android jika terjadi keterbatasan media pembelajaran yang disediakan oleh pihak sekolah; (3) Bagi sekolah dapat lebih melengkapi fasilitas media pembelajaran yang inovatif atau berbasis teknologi untuk pembelajaran ekonomi; dan (4) Bagi peneliti lain dapat menguji efektivitas media ini terhadap pembelajaran.

Keywords: *Pengembangan media android, karakteristik perusahaan dagang*

INTRODUCTION

Education is very important in an effort to educate the nation's life. One indicator of whether a country is progressing or not can be seen in the quality of its education. The more developed a country, the better the quality of education in that country. One of the good qualities of education is supported by the use of media in learning. Where learning media can improve the quality of learning (Rahmawati, 2005; Riyanto and Greece, 2020; Destiawan and Adi, 2021).

Learning media is also one of the crucial things that is a supporting part of a learning process in the classroom, learning media are usually used to facilitate the delivery of learning materials so that learning can be more conceptualized and clearer (Fatmawati, Sukartiningsih dan Indarti; Wijaya, Mustaji and Sugiharto, 2021). Learning media can make it easier for students to accept a learning concept (Khairunnisa and Ilmi, 2020; Shoffa, 2021). Learning media is also used by the sender of messages, ideas or ideas to convey messages, ideas or ideas clearly and completely to the recipient or audience (Fikri and Madona, 2018; Pakpahan, et al, 2020).

Learning media can also help students so that the learning process can be more effective with the aim of attracting students to take part in learning. As explained by Bakhrudin (2021: 190) one of the learning media aims to stimulate students' thoughts, feelings, interests and interests in what is being taught and aims to make the learning process more effective. In addition, the existence of learning media should be able to support verbalism learning towards applicative skills, utilize information and communication technology to improve learning efficiency and effectiveness and support the fulfillment of the demands of the new paradigm (providing maximum opportunities for students to actively experience learning activities). As intended by Permendikbud No. 22 of 2016 the principle of learning in the classroom should be able to apply verbalism learning towards applicative skills and be able to utilize information and communication technology well. One of the roles of learning media is to increase learning innovation by activating the use of students' sensory devices and meeting the demands of a new paradigm which provides the greatest opportunity for students to actively experience learning activities (Hilir, 2021; Putra, 2021).

SMAN 6 Jambi City is one of the schools located in the center of the Jambi city area, because it is located in the city area, researchers suspect that there will be many innovative or modern learning media. But in fact, based on the results of interviews and direct observation of the learning process in the classroom with Mr. Sarju, S.Pd. One of

the teachers at SMAN 6 Jambi City concluded that at SMAN 6 Jambi City, most of them were still doing teacher-centered learning by using conventional learning media or using the blackboard to explain learning materials. This indirectly makes students bored or less active when participating in learning, marked by students being engrossed in playing smartphones or chatting, when learning takes place, even though the teacher is explaining the learning material.

In addition, at this school there is an adequate internet network, there are school wifi facilities, computer laboratories, and the average student is quite good at using technology at least using their own gadgets which are marked by the results of a questionnaire in the form of a Google form that the researchers distributed. As many as 90.9% of students from 55 respondents from class XII IPS have become users of android smartphone devices while only 9.1% of students are not part of android users.

The limitations of innovative and modern learning media such as the symptoms above may be neglected by educators (teachers) for various reasons, one of which according to Japar (2018: 94): the use of interesting and innovative learning media is often neglected for various reasons including limited time for teaching preparation, difficulties looking for relevant media, as well as limited funds. This statement is supported by Alwi (2017:162). Problems in the development of learning media are caused because teachers find it difficult, expensive, unable to make, unavailable, and lacking in appreciation. This aroused the interest of researchers to develop further learning media. The author believes that learning media is an important part of the strategies and learning models implemented by the teacher in order to achieve learning objectives (Mulyana, Nurchotimah, and Mutaqin, 2022).

On the other hand, Android devices are one of the devices that are widely used by the school community. According to Guntoro (2019: 7), Android is an open-source operating system (OS) based on Linux created by Andy Rubin. Then it was bought by Google in 2005. Where this operating system accommodates many mobile devices such as smartphones, smartwatches, and so on. Android technology itself has several advantages, among others, according to Guntoro (2019: 9) it is open source (open source), the devices it covers vary from low end (cheap) to high end (expensive), and the features it has are quite complete. thus enabling developers to create robust applications. In addition, Shoffa's (2021:80) android technology can trigger educators to be more flexible in designing learning media according to learning objectives.

Then according to Kemp (2021), the use of OS in Indonesia is dominated by Android with a percentage of 92.3%. This shows that android technology is an alternative to operating system technology that supports devices that are quite widely used so that they can be used as learning media in the classroom. Meanwhile, the material on the characteristics of trading companies is one of the main materials in economic learning. This material is part of the basic competence of the accounting cycle of trading companies in the field of economic studies at XII IPS class SMA (Zuhra, 2020). This material was chosen because it requires an understanding of the concept of the material and is also based on the advice of the teacher of economic studies class XII IPS, Mr. Sarju. S.Pd. In

addition, according to students, this material is an important material to learn and media is made for learning.

Of the total 55 respondents of class XII Social Studies students who answered, 56.4% considered this material important, 40% considered it very important, 3.4% considered it normal, and 0% considered it unimportant. Then as many as 96.4% of the 55 students agreed that the learning media created later contained material for the characteristics of trading companies. And 87.3% of the 55 students agreed that the learning media for the characteristics of trading companies will be based on Android.

Based on the results of the overall observations above, android-based learning media material characteristics of trading companies for class XII IPS at SMAN 6 Jambi City are important and need to be developed, one of which can use the research method for developing learning devices and then the results of the development are tested for feasibility through the assessment of material experts, media experts, and the subject is limited to SMAN 6 Jambi City. This requires further scientific research through research.

Regarding similar research, including research by Sarah and Effendi (2019:364), they both developed android-based products by adapting the 4-D development model. The difference was their research in the field of biology studies. Then the product of the research results showed material validation of 93.75% (very valid), media assessment of 93.75% (very valid), and language validation of 84.38% (valid criteria). Then Zakiy, Syazali and Farida (2018:95) both conducted development research in the form of android-based learning media, but with different focus areas of study and research models. The results of his research argue that the android-based products he developed on average obtained scores by material experts and media experts of 3.67 and 3.59 with proper criteria. As well as several other studies Alhafidz and Haryono (2018: 123); Setiadi and Ghofur (2020:304); and Wahyono, (2019: 75) argue that overall each android-based product developed is valid and suitable for use in the economic learning process.

Based on the description above, the researchers are interested in conducting research under the title "Development of Android-based Learning Media Material Characteristics of Trading Companies Class XII IPS SMAN 6 Jambi City".

METHOD

In developing a product in the form of an Android-based learning media, the material for the characteristics of a class XII IPS IPS SMAN 6 Jambi trading company, the researcher used Java Runtime Environment (JRE), PowerPoint, I-Spring, and Website 2 Apk Builder software. The development method used in this research is the Research and Development method or the research and development method with the research model used adapted from the 4-D development model. Yuniastuti and Khoiron (2021:80) The Four-D (4D) development model is a development model for designing learning tools developed by Thiagarajan, Semmel, and Semmel. Where this 4D model consists of Define, Design, Develop and Disseminate. In this development model, there is a reduction in the "Disseminate" stage because the research objectives have been achieved only with

the Define, Design, and Develop stages. The following is a chart of the model adopted for the development of android-based learning media:

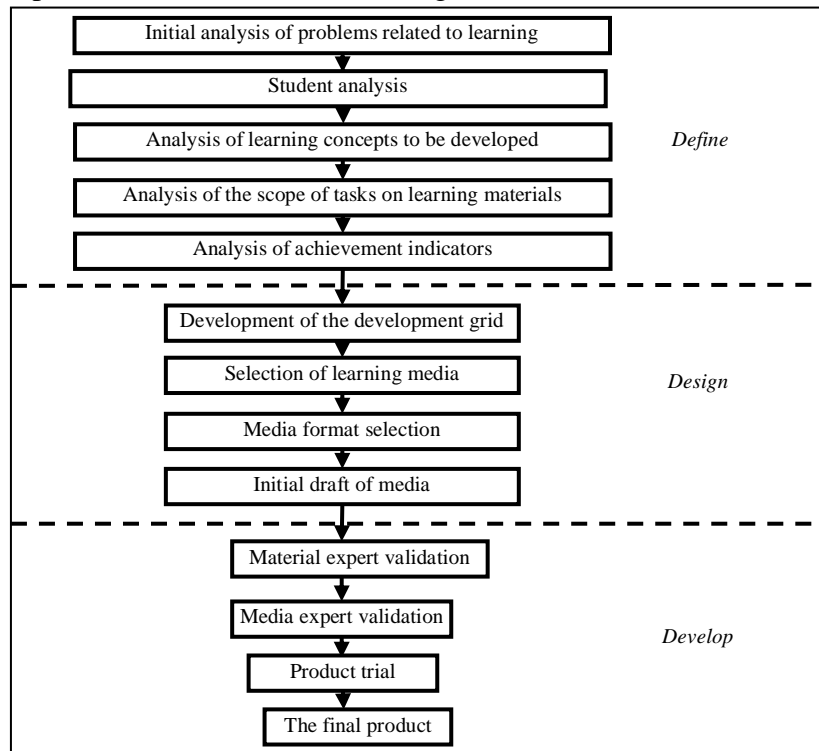


Figure 1. Media Product Development (Adaptation)

Source: Data processed by researchers

This definition stage is used to define what is needed in the development of learning media through analysis. Through the analysis, it is possible to determine the objectives and limits of the learning media. In this stage, there are five stages, namely; (1) Front-end analysis is a study to find out the basic problems faced by teachers in the field of study in the learning process so that the background for the development of learning media is needed; (2) Student analysis is a study of how the characteristics of students who become targets for the design of learning media product development. Student characteristics relevant to design and development will be identified. This activity includes an analysis of the basic competencies or cognitive levels of students; student behavior towards the subject matter; and students' views on the media and methods that are often applied by teachers; (3) Concept analysis is to identify the main concepts in the form of core competencies, basic competencies, and learning resources which will then be considered for implementation into learning media and arrange them in a hierarchy. This analysis helps identify material concepts to depict in media development; (4) Task analysis is to identify the main skills that will be acquired by students and analyze them into a set of required sub-skills. This analysis ensures a comprehensive scope of tasks in learning media; (5) Analysis of instructional objectives (determining learning objectives) is to transform the results of tasks and concept analysis into behaviorally stated goals. This set of objectives provides the basis for determining student achievement indicators.

The design stage aims to design android-based learning media for the characteristics of trading companies after the definition stage has been carried out. In this stage there are four steps, namely; (1) Developing standardized test criteria (grid preparation) is a step to bridge the definition stage and the design process. Standard test criteria (grid) to provide an overview of the assessment or validation for the development of learning media-related learning materials; (2) Media selection is the selection of appropriate media for the presentation of learning materials. This process involves task analysis and analysis of concepts, characteristics of students, production resources and so on. Final selection is useful for identifying the most appropriate media or media combination to use; (3) Format selection is closely related to media selection. The identification of the format needs to be adjusted to the media that has been selected, the needs of the teacher, the characteristics of the students who will use it, as well as compatibility with the learning materials; (4) The initial design is an initial rough description of the manufacture of the product (storyboard and flowchart). This is also the result of the accumulation of researchers' choices based on the results of the previous analysis.

The development stage aims to produce android-based learning media, material characteristics of trading companies that are final and have undergone revisions based on expert input from practitioners or experts and have been tested on students. In this stage several steps are summarized, namely;

- 1) Expert assessment (validation of media experts and validation of material experts) is a technique to obtain suggestions for material improvement. Media experts were selected from the lecturers of the Educational Technology Study Program, FKIP Jambi University, namely Dony Efriza, S.Pd, M.D and the material expert is a teacher of economics at SMA N. 6 Jambi City. A number of experts were asked to evaluate the material from an instructional and technical point of view. Based on their feedback, the materials were modified to be more suitable, effective, usable, and of high technical quality. Where in this expert assessment stage using a questionnaire sheet instrument using a scale of five and the validation criteria or categories of each expert are as follows:

Table 1. Category of Material Expert and Media Expert Validation Level

No	Category	Material Expert Validation Level Score	Media Expert Validation Level Score
1	Very good	100.9 – 120	96.7 – 115
2	Well	81.7 – 100.8	78.3 – 96.6
3	Pretty good	62.5 – 81.6	59.9 – 78.2
4	Not good	43.3 – 62.4	41.5 – 59.8
5	Very Not Good	24 – 43.2	23 – 41.4

(Adaptation: Widoyoko, 2018:112)

- 2) Development testing involves testing the instructional media on actual participants to find the part to be revised. This can be seen based on the responses of the students. In

the testing phase of this development, the Google Form questionnaire is used with the following description:

$$\%Criterion = \frac{\sum Total_Score}{\sum Score_Criterion} \times 100\%$$

By determining the number of criteria scores are as follows:

Total Criterion Score = Highest item score X Number of respondents

Table 2. Category of Student Response Levels

No	Percentage (%)	Category
1	81 - 100	Very good
2	61 - 80	Well
3	41 - 60	Pretty good
4	21 - 40	Not good
5	0 - 20	Very Not Good

(Adaptation: Ridwan, 2018:15)

FINDINGS AND DISCUSSION

The results of the development of android-based learning media that follow and adapt the 4-D development model can be described as follows:

1. Defining Stage

Front-end Analysis

- There are problems in economic learning based on direct interviews with teachers, namely learning material characteristics of trading companies requiring practical media to explain concepts, lack of use of innovative and modern learning media, and lack of active learning by students.
- Most of the economic learning media used are less student-oriented (only teacher-centred) based on direct observation.
- Economics learning mostly only uses improvised media, this sometimes results in reduced student enthusiasm for learning which is characterized by being easily tempted to do other activities (outside of lessons).
- Most of the students have android-based devices, where which can be a supporter of this research.
- The selection of class XII IPS which will be the target of development is chosen based on the consideration of points number 1-3.

Student Analysis (Learner Analysis)

- Most of the students are android device users. As the results of the questionnaire were distributed to 55 students, 90.9% of the students were android users.
- Half of the students like android-based learning media and some of them like learning media in the form of books. As the results of the questionnaire, students chose: 47.3% android media, 47.3% book media, and the rest were student work and computers.

- c) Most of the students consider that the economics lesson on the characteristics of trading companies is quite important and crucial. To the results of the questionnaire, the students responded: 56.4% important, 40% very important, and the rest were mediocre.

Concept and Task Analysis

In the concept analysis stage, the material “Characteristics of Trading Companies” is chosen which is the sub-section of Basic Competencies “3.6. Analyzing the Trading Company Accounting Cycle” based on KI and KD considerations, while at the task analysis stage a decision to select the “explaining” skill was made based on the instructional objectives to be achieved as stated in Table 3 below:

Table 3. Competency Achievement Indicators	
Basic Competency Achievement Indicators 3.6	
3.6.1	Explain the definition of a trading company
3.6.2	Describe the characteristics of a trading company
3.6.3	Explain the special accounts in a trading company
3.6.4	Explain the method of recording merchandise inventory

Source: Economics RPP SMA / MA Class XII

2. Stage of Design

Preparation of Standard Test Criteria

At the stage of compiling standardized test criteria, a questionnaire grid was compiled based on several aspects and indicators that facilitate the process of developing android-based learning media.

Media and Format Selection

In the selection of media, a learning media based on Android devices was chosen. Meanwhile, at the format selection stage, the Apk media file format was chosen because it can be applied/used to Android-based learning media.

Initial Design

a) Storyboard Design

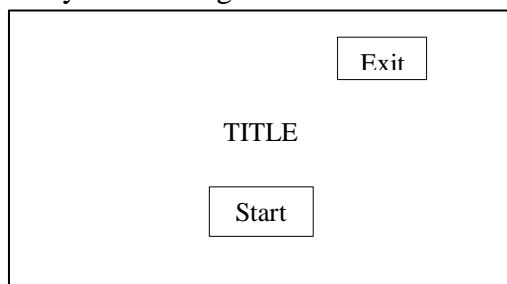


Figure 2. Storyboard Homepage
Source: Data processed by researchers

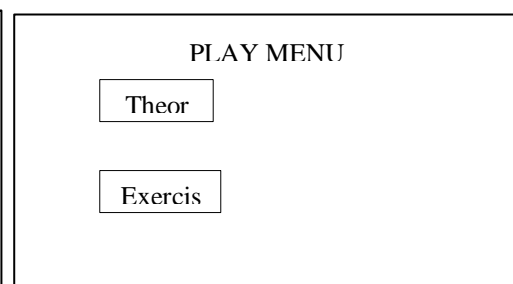


Figure 3. Storyboard Main Menu
Source: Data processed by researchers

b) Media Design Flowchart

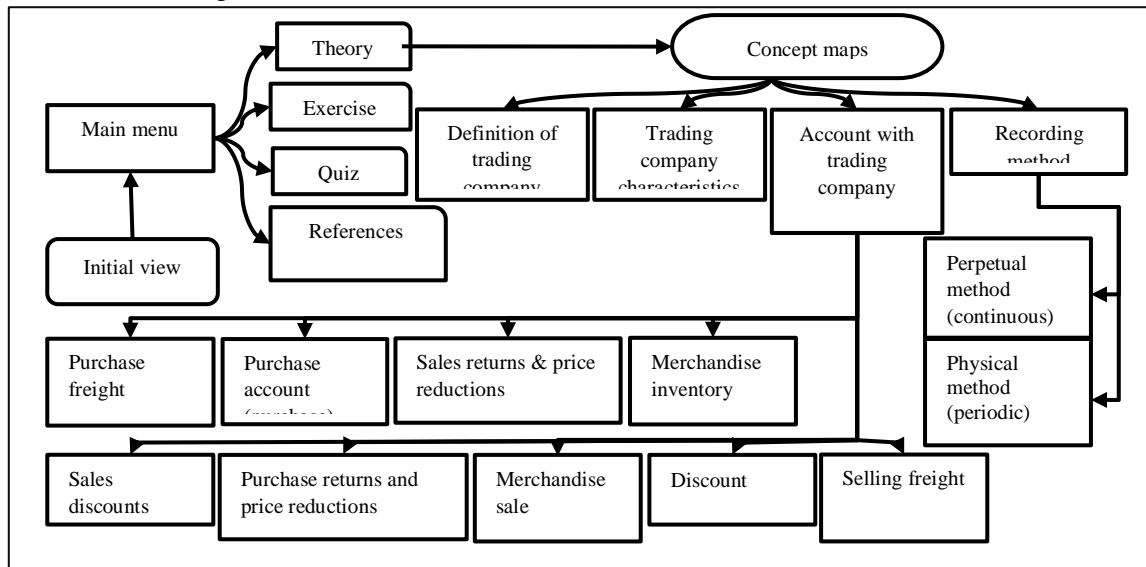


Figure 4. Media Design Flowchart
Source: Data processed by researchers

3. Development Stage

Media Development Results

- a) Display the start page, is the first display when the application is run. This page contains a “start” menu button.



Figure 5. Screenshot of the Homepage
Source: Data processed by researchers

- b) The main menu display, after pressing the "start" button, the user will be immediately directed to go to the main menu page. On the main menu page there are several buttons, including the material button, practice button, quiz button and bibliography button.

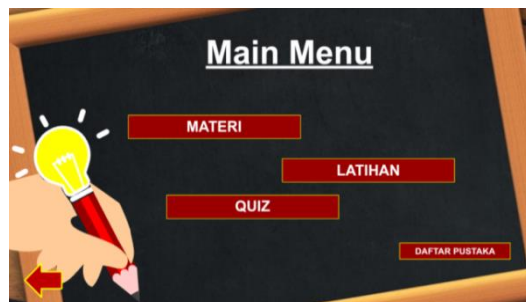


Figure 6. Screenshot of the Main Menu
Source: Data processed by researchers

- c) Material display, in this display contains material according to indicators of achievement of learning competencies such as explaining: (1) the arrangement of concept maps; (2) the definition of a trading company; (3) the characteristics of the trading company; (4) special accounts in trading companies; (5) method of recording merchandise inventory. The user can press the lower right corner arrow button to go to the next material page. This page is also equipped with a home button if you want to return to the main menu.

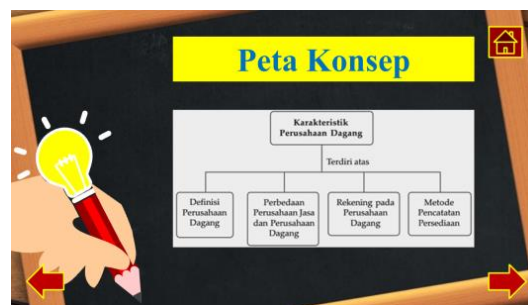


Figure 7. Screenshot of Concept Map Display (1)

Source: Data processed by researchers



Figure 8. Screenshot of Trading Company Definition Display (2)

Source: Data processed by researchers

KELEBIHAN DAN KELEMAHAN PERUSAHAAN DAGANG & JASA		
Jenis	Kelebihan	Kekurangan
Jasa	<ul style="list-style-type: none"> Tidak perlu tempat untuk me-majang (display) barang Tidak diperlukan tempat untuk menyimpan barang (gudang) Tidak perlu alat angkut untuk mengirim barang kepada kons-umen. 	<ul style="list-style-type: none"> Kualitas jasa dapat diketahui setelah konsumen membeli jasa. Jasa yang sudah dibeli tidak dapat dikembalikan (diretur).
Dagang	<ul style="list-style-type: none"> Menjual barang tanpa mengolah lebih dulu. Kualitas barang dapat di-ketahui secara langsung oleh konsumen. 	<ul style="list-style-type: none"> Diperlukan tempat untuk memajang (display) barang. Diperlukan tempat untuk menyimpan barang (gudang). Diperlukan alat angkut untuk me-ngirim barang kepada konsumen. Barang yang sudah dibeli konsumen dapat dikembalikan (diretur) sehingga perusahaan tidak jadi memperoleh penghasilan

Figure 9. Screenshot of the Display of Trading Company Characteristics (3)

Source: Data processed by researchers

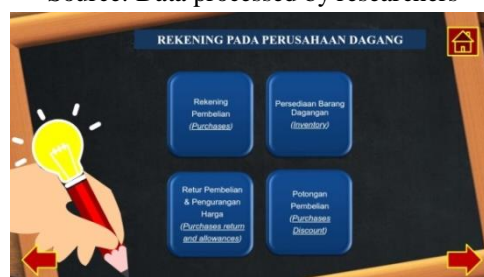


Figure 10. Screenshot of Accounts in Trading Companies (4)

Source: Data processed by researchers

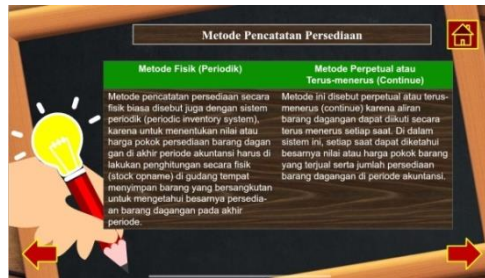


Figure 11. Screenshot Display of Merchandise Inventory Recording Method (5)

Source: Data processed by researchers

- d) In the exercise display, users can access this menu if they feel they have studied enough learning material, and want to take part in the exercise. On this page there are 5 multiple choice questions that will respond if you answer the question correctly or incorrectly.

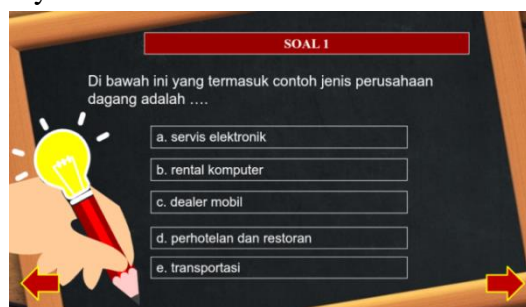


Figure 12. Screenshot of Exercise Display

Source: Data processed by researchers

- e) Quiz display, users can train themselves more by taking quizzes. By pressing the "start quiz" button, the first page that appears is the page where students need to enter personal identity data (name, email address and class), then press "submit" to start working on the questions.

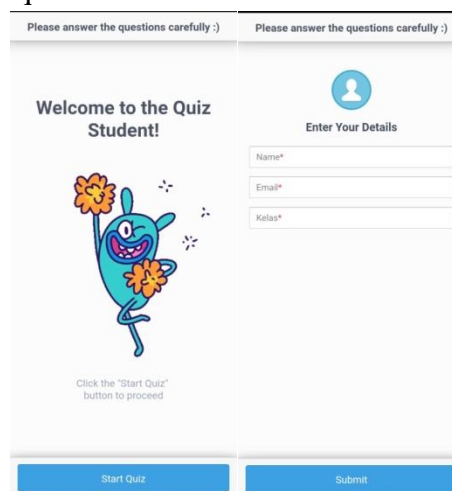


Figure 13. Screenshot of the Quiz Display.

Source: Data processed by researchers

- f) Bibliography view, contains a list of bibliography references and can be clicked to go to the download link.



Figure 14. Screenshot of Bibliography
Source: Data processed by researchers

Material Expert Validation

Table 4. Data of Material Expert Validation Results

No	Aspect	Score	Maximum score
1	Material Relevance	25	5 x 5 = 25
2	Material Organizing	29	6 x 5 = 30
3	Evaluation/Practice Questions	30	6 x 5 = 30
4	Language	10	2 x 5 = 10
5	Effects on Learning Strategies	15	3 x 5 = 15
6	Learning strategies	10	2 x 5 = 10
Total		119	120
Recommendation: Please explain the instructions for use			

Source: Data processed by researchers

Learning media is said to be valid if it meets the valid or good category, as Widjayanti, et al. (2018: 104), Learning media is said to be valid if the combined percentage of validators is more than 60%. In this study, the android-based learning media that has been developed and validated by economics subject teachers as material experts is declared valid or feasible with the criteria of "very good". This is in line with the research of Sarah and Effendi (2020) the results of material validation of 93.75% indicate very valid criteria; Purwati (2018) where the material assessment obtained a percentage of 76.4%; and Alhafidz and Haryono (2018) the results of their research show that the average material expert validation is 86.15%.

Material Expert Validation

Table 5. Data of Media Expert Validation Results

No	Aspect	Score	Maximum score
1	Language	25	3 x 5 = 15
2	Effects on Learning Strategies	29	5 x 5 = 25
3	Software engineering	30	7 x 5 = 35
4	Visual Display	10	8 x 5 = 40
Total		92	115
Recommendation: Because the application cannot be repaired, the researcher must provide additional information before using the application directly, such as scoring information on quizzes.			

Source: Data processed by researchers

Learning media is said to be valid if it meets the valid or good category, as Widjayanti, W. R., Masfinatin, T., and Setyansah, R. K. (2018: 104), Learning media is said to be valid if the combined percentage of validators is more than 60%. In this study, android-based learning media that have been developed and validated by lecturers who have been appointed as media experts are declared valid or feasible with the "good" criteria. This is in line with the research of Sarah and Effendi (2020) that media assessment shows very valid criteria; Purwati (2018) where the media rating is very good; and Alhafidz and Haryono (2018) results of their research show that on average the validation of media experts is very good.

Student Response

Table 6. Data on Student Response Results

Σ Overall score (earned)	Σ Criterion score (maximum)
116	1 x 6 x 20 = 120

Source: Data processed by researchers

$$\% \text{ Criterion} = \frac{116}{120} \times 100\% = 96.7\%$$

The implementation of the trial is used to determine whether the media that has been developed is included in one of the interesting and appropriate media to be used in learning with indicators: the attractiveness of delivering material by the media, clarity of sample questions, clarity of instructions for working on questions, adding curiosity, increasing understanding, and increase learning motivation.

Where the results of the response questionnaire to the learning media obtained a score of 116 or with an average percentage of 97% which was included in the "Very good" criteria. This is in line with Damayanti and Qohar's research (2019) where students' responses were positive to the developed media; Alhafidz and Haryono (2018) research results show the validation of the trial with good criteria, and Kartini and Nyoman (2020) the final results of the student response questionnaire were in the very good category.

CONCLUSION

Based on the research objectives, results and discussion of the research, it can be concluded that: (1) Android-based learning media material characteristics of trading companies class XII IPS SMAN 6 Jambi City was successfully developed using research and development methods with a 4-D adapting development model with the definition stage, design, and development using several software namely: Java Runtime Environment (JRE), Powerpoint, iSpring Suite, and Website 2 APK Builder Pro; (2) The feasibility of android-based learning media material characteristics of trading companies for class XII IPS SMAN 6 Jambi City media experts, material experts, teachers, and

students were declared eligible or valid by obtaining a score of 119 ("very good" category) by material experts; a score of 92 ("good" category) by media experts; and a score of 116 or an average percentage of 97% (category "very good") based on the student response questionnaire. From these conclusions, the researchers suggest: (1) Students can use cell phones more often for learning activities than other entertainment activities; (2) Teachers can use android-based learning media more often if there are limitations of learning media provided by the school; (3) Schools can further equip innovative or technology-based learning media facilities for economic learning; and (4) other researchers can test the effectiveness of this media on learning.

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REFERENCES

- Alhafidz, M. R. L., dan Haryono, A. (2018). Pengembangan mobile learning berbasis *android* sebagai media pembelajaran ekonomi. *Jurnal Pendidikan Ekonomi*, 11(2), 118-124.
- Alwi, S. (2017). Problematika guru dalam pengembangan media pembelajaran. *ITQAN: Jurnal Ilmu-Ilmu Kependidikan*, 8(2), 145-167.
- Bakhruddin, M. (2021). *Strategi Belajar Mengajar "Konsep Dasar dan Implementasinya"*. Bojonegoro: Agrapana Media.
- Damayanti, P. A., dan Qohar, A. (2019). Pengembangan media pembelajaran matematika interaktif berbasis powerpoint pada materi kerucut. *Kreano, Jurnal Matematika Kreatif-Inovatif*, 10(2), 119-124.
- Destiawan, M. C., & Adi, S. (2021). Media Pembelajaran Berbasis Blended Learning Pada Olahraga Renang (Literature Review). *Gelombang Pendidikan Jasmani Indonesia*, 5(1), 73-88.
- Fatmawati, F., Sukartiningsih, W., & Indarti, T. (2021). Media Pembelajaran Audio Visual: Literature Review. *Pionir: Jurnal Pendidikan*, 10(1).
- Fikri, H dan Madona, A.S. (2018). *Pengembangan Media Pembelajaran Berbasis Multimedia Interaktif*. Yogyakarta: Samudra Biru.
- Guntoro. (2019). *Android Studio Mastery "Panduan Membuat Aplikasi Android Untuk Pemula Dalam 9 Hari"*. Banten: Badoy Studio.
- Khairunnisa, G. F., & Ilmi, Y. I. N. (2020). Media pembelajaran matematika konkret versus digital: Systematic literature review di era revolusi industri 4.0. *Jurnal Tadris Matematika*, 3(2), 131-140.
- Hilir, A. (2021). *Teknologi Pendidikan Di Abad Digital*. Klaten: LAKEISYA.

- Japar, M. (2018). *Teknologi dan Informasi Pendidikan*. Jakarta: Laboratorium Sosial Politik Press.
- Kartini, K. S., dan Putra, I. N. T. A. (2020). Respon Siswa Terhadap Pengembangan Media Pembelajaran Interaktif Berbasis Android. *Jurnal Pendidikan Kimia Indonesia*, 4(1), 12-19.
- Kemp, S. (2021). <https://datareportal.com/reports/digital-2021-indonesia> diakses 21 November 2021 Pukul 22.32.
- Mulyana, R. A., Nurhotimah, A. S. I., & Mutaqin, Z. (2022). Konsep Pendidikan Kewirausahaan di Perguruan Tinggi. *Eduksos: Jurnal Pendidikan Sosial dan Ekonomi*, 11(1).
- Pakpahan, A. F., Ardiana, D. P. Y., Mawati, A. T., Wagiu, E. B., Simarmata, J., Mansyur, M. Z., & Iskandar, A. (2020). *Pengembangan media pembelajaran*. Yayasan Kita Menulis.
- Purwati, Y., Buyung, B., dan Relawati, R. (2018). Pengembangan Lembar Kerja Siswa (LKS) Berbasis Problem Based Learning (PBL) pada Materi Matriks Siswa Kelas XI MIA SMAN 6 Kota Jambi. *Jurnal Ilmiah Dikdaya*, 8(1), 213-221.
- Putra, A. (2021). Systematic Literature Review: Media Video Blog (Vlog) pada Pembelajaran Matematika. *Alauddin Journal of Mathematics Education*, 3(1), 111-121.
- Rahmawati, A. (2015, November). Meningkatkan Kualitas Pembelajaran Mekanika Teknik Melalui Media Pembelajaran Inovatif. In *Prosiding Seminar Pendidikan Ekonomi dan Bisnis* (Vol. 1, No. 1).
- Riduwan. (2018). *Skala Pengukuran Variabel-Variabel Penelitian*. Bandung: Alfabeta.
- Riyanto, A., & Yunani, E. (2020). The Effectiveness of Video as a Tutorial Learning Media in Muhadhoroh Subject. *Akademika: Jurnal Teknologi Pendidikan*, 9(02), 73-80.
- Sarah, R. A P., dan Effendi, Z. M. (2019). Pengembangan Mobile Learning Berbasis Android Pada Mata Pelajaran Biologi Kelas X Sma. *Wahana Didaktika: Jurnal Ilmu Kependidikan*, 17(3), 356-365.
- Setiadi, M. E., dan Ghofur, M. A. (2020). Pengembangan Media Pembelajaran Mobile Learning Berbasis Android Dengan Pendekatan Kontekstual Pada Mata Pelajaran Ekonomi Kelas X IPS. *Didaktis: Jurnal Pendidikan dan Ilmu Pengetahuan*, 20(3).
- Shoffa, S. (2021). *Perkembangan Media Pembelajaran di Perguruan Tinggi*. Bojonegoro: CV. Agrapana Media.
- Wahyono, H. N. (2019). Pengembangan Media Pembelajaran Ekonomi Interaktif Berbasis Android Sebagai Upaya Peningkatan Aktivitas dan Hasil Belajar Siswa. *Gulawentah: Jurnal Studi Sosial*, 4(2), 74-77.
- Widjayanti, W. R., Masfingatin, T., dan Setyansah, R. K. (2018). Media pembelajaran interaktif berbasis animasi pada materi statistika untuk siswa kelas 7 SMP. *Jurnal Pendidikan Matematika*, 13(1), 101-112.

- Widoyoko, E. P. (2018). *Teknik Penyusunan Instrumen Penelitian*. Yogyakarta: Pustaka Belajar.
- Wijaya, R. E., Mustaji, M., & Sugiharto, H. (2021). Development of Mobile Learning in Learning Media to Improve Digital Literacy and Student Learning Outcomes in Physics Subjects: Systematic Literature Review. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 4(2), 3087-3098.
- Yuniastuti, M., dan M. Khoiron. (2021). *Media Pembelajaran Untuk Generasi Milenial Tinjauan Teoritis Dan Pedoman Praktis*. Surabaya: Scopindo Media Pustaka.
- Zakiy, M. A, Syazali, F. dan Farida, M. (2018). Pengembangan media *android* dalam pembelajaran matematika. *Triple S (Journals of Mathematics Education)*, 1(2), 87-96.
- Zuhra, C. H. (2020). Peningkatan Hasil Belajar Ekonomi melalui Model Pembelajaran Project Based Learning Materi Siklus Akuntansi pada Perusahaan Dagang. *Jurnal Kinerja Kependidikan (JKK)*, 2(4), 704-721.