

## **Development of a Mobile Accounting Application Based on Project Based Learning for State Vocational High School Students in Batubara Regency**

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### **ABSTRACT**

*This study aims to determine the feasibility of project-based learning-based mobile applications in accounting subjects in vocational high schools. the method used in this research is research and development. the subject of this research is students of state vocational high school 1 Sei Suka. the results showed that the learning outcomes of Accounting for Service Companies of students taught using Mobile Application media were higher than the learning outcomes of Accounting for Service Companies of students taught without Mobile Application media which was tested through the t statistical test with the test results showing the tcount price  $4.43 > 1.671$ . Based on the results of this study, it was found that the average score of students taught using Mobile Application media was higher than the average score of students taught without Mobile Application media. Based on the results of this study, it is also obtained that the average score of students taught using Mobile Application media is higher than the average score of students taught without Mobile Application media.*

**Keywords :** *Project Based Learning, Accounting, Mobile Application, Media.*

### **INTRODUCTION**

Service Company accounting subjects are very important to be mastered by students at Vocational High Schools (SMK) Accounting study programs. This lesson is very necessary because the competence of students to be able to understand the concept of financial statements is taught in this lesson. The material is the basis for understanding the type of transaction, so it can also determine the post / account of each transaction that occurs correctly. Thus reducing the risk of errors in financial management. So far, many business people are not right in making financial statements due to lack of understanding in the basic concepts of accounting.

The very low level of understanding of business actors in making financial reports actually provides an opportunity for vocational school graduates with expertise in Business and Accounting to be able to assist entrepreneurs, especially in Small and Medium Scale Enterprises, so that they can make correct financial reports. This is proven by the large number of job vacancies for vocational school graduates majoring in Accounting as financial staff and even as recorders of deviations and cost control (Cost Control).

The success of an educational goal depends on how the teaching and learning process is experienced by students. Apart from being required to be careful in choosing and implementing teaching methods that suit the objectives to be achieved, a teacher is also required to be able to choose media that suits the material to make it easier to convey the material. For this reason, media is needed that can attract students to absorb the material. One of the media that can be developed is interactive learning practicum in the form of a mobile phone application.

Current learning activities emphasize process skills and active learning, so learning

media is becoming increasingly important (Nurseto, 2011). Mobile Practicum can facilitate students in independent and conventional learning. The application is equipped with instructions for self-study, so that students can learn according to their abilities and can fulfill all the competencies that students must master. Practical applications are learning tools or facilities that contain material, methods, limitations and evaluation methods that are designed systematically and interestingly to achieve the expected competencies according to the level of complexity (Depdiknas, 2008). In accordance with the characteristics of Basic Electronics material, conveying material or explanations to students requires various media, because for students to understand this material requires quite high abstraction. It is not enough just to describe how electric current flows, but a simulation is needed so that it is interesting and students can remember it well.

So far, teaching materials and programs in schools are still focused on financial accounting subjects. This is proven by the large number of teaching material software for financial accounting practices used at the vocational school level, such as applications General Ledger, MYOB Accounting, Accurate Accounting dan Zahir Accounting. On the other hand, there have not been many applications for service company accounting subjects to date.

Teaching materials (Instructional Materials) is a set of knowledge, skills and attitudes that students must learn in order to achieve predetermined learning goals. This learning material is prepared systematically, whether written or not, so as to create an environment/atmosphere that allows students to learn. There are several things that must be considered in determining teaching materials (Ibrahim & Syaodih, 2003), namely: (1) teaching materials should support the achievement of learning objectives (relevance between objectives and material); (2) teaching materials should be appropriate to the general level of education/development of students; (3) teaching materials must support the achievement of learning objectives; (4) teaching materials should be organized systematically and continuously; (5) teaching materials should be sufficient to help students master the basic competencies being taught (principle of sufficiency).

Practical application via mobile application can make the learning process more interesting, more interactive, able to convey historical messages through pictures and videos, encourage student learning through instrumentals, able to develop students' auditory or auditory senses so that the material presented is easier to understand. Mobile application A good one is able to present various kinds of events that can be used as learning media that are similar to the object that will be presented through various manipulations of conditions that can be simulated. Of all the objects depicted, in order for the media to be presented in accordance with real conditions, there needs to be good design and must pay attention to the sequence of events that will be presented so that students can understand them coherently and create a good understanding of the concepts that will be explained.

The fact is mobile application should be a source of information that is easy to understand and use. Basically, media are all forms of intermediaries used by humans to convey or spread ideas, ideas or opinions so that the ideas, ideas or opinions expressed reach the intended recipients (Arsyad, 2011). Good media should be media that is easy to use, the instructions given are easy to understand and easy for students to respond to. The presentation of learning materials and the language used make students feel familiar mobile application and motivated to learn it, because of one of the characteristics mobile application is user friendly.

Development mobile application It is intended that teachers are not fixated on/completely relying on conventional teaching materials such as textbooks from other authors, but it is hoped that teachers will be able to create their own teaching materials that suit students' conditions, curriculum and science and technology. Teaching materials that can be created by teachers can be combined from various sources of teaching materials. Sources of teaching materials are places/parties where teaching materials can be obtained, which include, among other things, printed materials, multimedia, the environment and people.

From the various sources of teaching materials mentioned above, teachers are then expected to compile and develop their own teaching materials which can be packaged in various forms, including: (1) Printed teaching materials, namely handouts, textbooks/modules, LKS (Student Worksheets). , posters; (2) Audio visual, namely videos/films, VCDs, radio, cassettes, audio CDs, photos, images, models/models; or (3) computer-based teaching materials such as interactive CDs, internet-based multimedia and applications, as well as electronic-based digital. This is intended to improve student learning achievement.

A person's recognition of the results or progress of their learning is very important, because by knowing the results that have been achieved, students will try more to improve their learning achievements. So that the increase in learning outcomes can be more optimal. One of the parameters used to measure the level of educational success is student learning outcomes. Apart from that, students are also expected to be able to help business actors in preparing their business accounting reports.

To achieve satisfactory learning results, the most basic thing to achieve all of this is to foster interest in learning itself. In the process of teaching and learning activities, there are many problems faced by a teacher, especially in dealing with students who do not pay attention to lessons, problems that exist in students or difficulties in themselves so that they can learn successfully in teaching and learning activities. When teaching and learning activities (KBM) take place, quite a few students have low comprehension skills, this is influenced by several factors, including because the student has a low intelligence quotient (IQ) or the student is not learning enough. However, there are also some students who feel that the learning method applied by the teacher in delivering the material is not appropriate so that these students have difficulty understanding the material presented during teaching and learning activities. To overcome this, a method is needed that can increase students' interest in learning. In this case, creating digital-based teaching materials is one of the appropriate methods for improving student learning outcomes.

Based on the results of observations at Sei Suka State Vocational School 1, Sei Suka District, Batubara Regency, it was found that to support the learning process, the school has provided adequate facilities such as an accounting laboratory, which is equipped with an LCD projector. However, when studying for service company accounting subjects, electrical-based practicums are still not implemented, so students still do not master the material well, because there are no applications that support easy learning in service company accounting subjects, both in theory and in practice in the accounting laboratory. According to (Kwak, 2015) the influence of the use of technology is very strong in learning service companies, his research even provides evidence that students who study service companies online using technology can have competence in the field of service companies.

Lack of use of available facilities will not support classroom learning. Apart from the LCD projector, there is also a fast internet network. However, the internet network is

underutilized by educators as a supporting conventional media that makes it easier for students to understand service company accounting lessons.

Based on the results of observations and interviews conducted by researchers with accounting subject teachers for service companies at SMK Negeri 1 Sei Suka, the results were not optimal. The school has determined the minimum completeness criteria (KKM) score for the service company accounting subject with an average score of 65.

From the results of observations that have been made, researchers will utilize the school facilities that are available to improve student learning outcomes which are still less than optimal. The internet network that has been installed will be useless if it is not used effectively

This can be seen from the student scores obtained in the service company lesson for the last 2 (two) years which can be seen in Table 1.1 below:

**Table 1. Acquisition of Accounting Value of Service Company at State Vocation High School 1 Sei Suka**

Academic Year	Mark	The number of students	Percentage (%)
2021/2022	<70	7 Students	23,33
	70 -79	15 Students	50
	80 -89	8 Students	26,67
	90 -100	There isn't any	-
Amount :		30	100
Academic Year	Mark	The number of students	Percentage (%)
2020/2021	<70	5 Students	15,63
	70 -79	17 Students	53,12
	80 -89	10 Students	31,25
	90 -100	There isn't any	-
Amount :		32	100

By paying attention to Table 1.1 of learning outcomes for service company accounting subjects, the researcher found that the learning outcomes of class XI students in the Accounting Skills Program at SMK Negeri 1 Sei Suka Indrapura, Kec. Sei Suka, Batubara Regency since the 2016/2017 Academic Year, out of 32 students, 5 students obtained a score of <70, 17 students obtained a score of 70<79, 10 students obtained a score of 80-89 and none obtained a score of 90-100, Academic Year 2017/2018 in the odd semester that out of 30 students, 7 students got a score of <70, 15 students got a score of 70-79, 8 students got a score of 80-89 and 8 students got a score of 90-100, there were still no students whose score is still below the Minimum Completion Criteria (KKM). With the Minimum Completion Criteria (KKM) that apply at SMK Negeri 1 Sei Suka.

In the ongoing learning, the teacher only explains the material visually so that students

only focus on the teacher, giving the impression that students cannot directly practice it on their computers, but the learning is still felt to be lacking in detail and effectiveness. The media used by teachers has not been able to increase students' interest in learning. Apart from that, conventional media does not yet facilitate students' independent learning.

It is not enough to deliver practical material just by explaining it visually. To overcome this, learning media is needed that can support the teaching and learning process. In this way, teachers no longer have difficulty explaining the material and do not just rely on the material listed in the e-book but can add it by creating a service company lesson application to make it easier for students to understand the process of preparing service company financial reports well.

One learning model that can improve the ability to produce a product is Project Based Learning. With the Project Based Learning learning model, students can produce a product. Apart from that, Project Based Learning is student-centered so that it can make students independent.

Global School Net (2000) reports the results of the AutoDesk Foundation's research on the characteristics of Project Based Learning. The results of this research state that Project Based Learning is a learning approach that has the following characteristics: students make decisions about a framework, there are problems or challenges posed to students, students design a process to determine solutions to the problems or challenges posed, students are collaboratively responsible for accessing and managing information to solve problems, the evaluation process is carried out continuously, students regularly reflect on activities that have been carried out, the final product of learning activities will be evaluated qualitatively, and the learning situation is very tolerant of errors and changes .

The Project Based Learning method is a refinement of the Problem Based Learning method. Project Based Learning is a training strategy that is oriented towards CTL or contextual teaching and learning process (Jones, Rasmussen and Moffit, 1997). CTL is a learning concept that helps educators link learning material with real world situations and encourages students to use the knowledge they have to apply it to their lives as members of society.

Project Based Learning is learning that places more emphasis on solving authentic problems that occur every day through direct practical learning experiences in the community (John, 2008: 374). The use of digital-based teaching materials will help and simplify the learning process for students and teachers. Students can learn first by seeing and absorbing the lesson material more fully. Learning media is used as a tool to channel information from teachers to students and stimulate students' thoughts, feelings, attention and interests.

In this way, the teacher does not have to explain the material over and over again so that the learning process can be more interesting, more effective and efficient. By using mobile application, teachers can present learning material in the form of mobile applications coupled with writing and the material presented seems more interesting. In this way, the delivery of material by the teacher becomes easier for students to understand and comprehend so that it can improve student learning outcomes.

## **LITERATURE REVIEW**

### **Learning Media**

Sukiman (2012:29) states that learning media are:



"Learning media is anything that can be used to channel messages from the sender to the recipient so as to stimulate the thoughts, feelings, attention and interest and will of students in such a way that the learning process occurs in order to achieve effective learning goals." The explanation of what Sukiman stated is that learning media is a supporting tool used by educators to convey teaching materials/materials to students in order to achieve effective learning goals. The ease of educators in delivering material is one of the important things in improving the quality of education.

(Arsyad, 2011) added that learning media is anything that can be used to convey messages or information in the teaching and learning process so that it can stimulate students' attention and interest in learning. This explains that learning media are tools in all forms that can help teachers convey knowledge/information to students. So that the use of these tools can provide a special attraction in the delivery process.

### **Mobile Application**

Mobile Application (mobile application) is an application that allows you to carry out mobility using equipment such as a PDA, cell phone or cellphone. By using mobile applications, you can easily carry out various activities ranging from entertainment, selling, studying, doing office work, browsing and so on. The use of mobile applications for entertainment is most popular with almost 70% of cell phone users, because by utilizing the game features, music players, and even video players, it becomes easier for us to enjoy entertainment anytime and anywhere. (Rifqi Mulyadi: 2010).

The definition of Android according to Nazrudin Safaat (2014: 1) "is an operating system for Linux-based mobile devices that includes an operating system, middleware and applications". Android provides an open source platform for developers to create applications. Initially, Google Inc. acquires Android Inc. which develops software for cellphones/smartphones. Then to develop Android formed Open Handset Alliance (OHA). OHA is a consortium group with members of more than 34 companies from the hardware, software and telecommunications sectors including HTC, Intel, Motorola, Qualcomm, T-Mobile Nvidia and Asus (Nazrudin Safaat, 2014: 1-2).

### **METHODS**

This research uses a research and development method which is a research method that is usually used to produce a particular product and test the suitability of the product (Sugiyono, 2014: 296). The main aim of development research is to produce an effective product for schools (Putra, 2015: 165). This research produces a product that can be used in the learning process in the form of a mobile phone-based learning practicum application. Research into the development of a product for learning media was carried out to determine the suitability of the media in the learning process. Therefore, it is necessary to have a research design that has stages so that this research can move in the right direction. The research stages carried out refer to the Borg & Gall (2003) development model, which includes: Research and Information Collecting, Planning, Develop Preliminary Form of Product, Preliminary Field Testing, Main Product Revision, Main Field Testing, Operational Product Revision, Operational Field Testing, Final Product Revision, and Dissemination and Implementation.

This development model was chosen because in this model the product assessment

process goes through 3 assessment stages, namely assessment by material experts and experts mobile application, initial assessment by students, and final assessment by students. So if the product is developed in accordance with this development procedure, it will produce a quality product that is suitable for use as a learning resource.

This media development research was carried out through the following stages, namely the Research and Information Collecting, Planning, Develop Preliminary Form of Product, Preliminary Field Testing, Main Product Revision, Main Field Testing, Operational Product Revision, Operational Field Testing, Final Product stages. Revision, and Dissemination and Implementation.

This development research uses the Dick & Carey development model to produce a development product mobile application Accounting-based learning project based learning. The reason the researcher chose the Dick & Carey development model This is because the steps and stages contained in this model are very systematic and more complex, so it is very suitable for developing a product like mobile application in the field of education.

The instructional development model used is the Dick & Carey learning design model. Model Dick & Carey is a development model developed through a systems approach (System Approach). Regarding the basic components of learning system design which include analysis, design, development, implementation and evaluation. The learning system model developed by Dick & Carey consists of several components that need to be carried out to create a larger learning activity plan.

Implementing this learning system design model requires a comprehensive systematic process. This is necessary to be able to create a learning system design that can be used optimally in overcoming learning problems. There are 10 components and steps in the development model discovered by Dick & Carey (2001:6), namely (1) needs analysis to identify objectives, (2) instructional analysis, (3) learner and context analysis, (4) formulating performance objectives, (5) developing research instruments, (6) developing learning strategies, (7) developing and selecting learning materials, (8) conducting formative evaluations, (9) carrying out revisions, (10) designing and conducting summative evaluations, Dick & Carey include cognitive elements and behaviorism which emphasizes students' responses to the stimuli presented (Dick & Carey 2001:16-17).

The population of this research is students of class XI at State Vocation School 1 Sei Suka, Batubara Regency, Accounting Study Program which consists of 2 classes, namely, class The sample in this study was students of class XI Accounting 1. Before being tested on research subjects, interactive learning media had gone through a validation stage by Information Technology experts and material experts.

The data collection methods used in this research are test and non-test, namely: Interviews and Observations, Learning Results Test. Before the service company test instrument is used to collect research data, validity and reliability tests are first carried out. The trial was carried out on respondents outside the sample. The method taken is to give tests to students selected as trial respondents. For service company learning outcomes for class XI students at State Vocation High School 1 Sei Suka, totaling 26 students.

In the process of testing or validating this product, the collection tool is in the form of a questionnaire with a Linkert scale. There are two data obtained in this research, namely qualitative data and quantitative data. Qualitative data in the form of criticism, suggestions and responses from the respondents. Qualitative data is used as a basis for revising the product

being developed. Quantitative data obtained through assessment questionnaires were analyzed using descriptive statistics by finding the average assessment results and then converted to qualitative data to determine product quality.

## **RESULTS AND DISCUSSION**

### **Results**

The process of implementing media development mobile application based project based learning Service Company Accounting is carried out in stages. The first stage in this development activity is to conduct a needs analysis at SMK Negeri 1 Sei Suka, Batubara Regency by giving questionnaires to subject teachers, where the questionnaire contains several statements from the media. mobile application based project based learning the. The results of the questionnaire stated that teachers need media mobile applicationbased project based learning Service Company Accounting so that the learning process runs more effectively and efficiently. The needs analysis questionnaire can be seen in the Appendix.

Based on product validation through a series of trials and revisions that have been carried out, then mobile applicationbased project based learning already has valid status. The trial was carried out in six stages: a) validation of learning design experts, b) validation of learning media experts, c) validation of material experts, d) individual trials, e) small group trials, f) field trials.

validation with experts is categorized based on the following criteria:

#### **By criteria:**

- 0% < eligibility% ≤ 25%, not eligible
- 25% < qualification% ≤ 50%, less qualified
- 50% < qualification% ≤ 75%, qualified
- 75% < qualifying% ≤ 100%, highly qualified

### **Data from Media Expert Validation Results**

Media expert validation mobile applicationbased project based learning The material on Service Company Accounting was carried out by 1 person, namely a lecturer at Medan State University, Information Technology Study Program, namely Dr. Janner Simarmata, M.Kom. The assessment is carried out to obtain information that will be used to improve the suitability of the media mobile application based project based learning on Service Company Accounting material. Based on media expert evaluation data, the average score for all aspects is 68, which is within the score range  $63,9 < XI \leq 79,8$ . So, the whole aspect of this media is included in the "Very Worthy" category. The percentage of eligibility for learning design: Qualification 85%.

### **Data on Individual Trial Results**

Individual trials were carried out at SMK Negeri 1 Sei Suka, Batubara Regency. Individual trials were carried out on 3 class The purpose of individual testing is to identify deficiencies in learning products after being reviewed by experts. The assessment and input from this trial is about the presentation of learning products including learning aspects and conventional media.

The results of individual trials are in the form of media assessment scores mobile



application based project based learning The overall service company accounting material can be seen in table below:

**Table 2. Individual Trial Assessment Score in Mobile Media application Based on Project Based Learning on Service Company Accounting Material**

No.	Aspect	Indicator	Respondent			Total score
			1	2	3	
1.	Learning	Instructions for Service Company Accounting material are easy to understand	5	5	5	15
2.		Makes it easy to remember the theory within the scope of the material	5	5	4	14
3.		Provide opportunities to study elsewhere (outside class hours)	5	4	5	14
4.		Provide opportunities for students to learn Independent	5	5	5	15
5.		The material presented attracts attention	5	5	5	15
6.		Material can increase learning motivation	5	4	4	13
7.		The material presented uses clear, concise and easy to understand language	5	5	5	15
8.		The sequence for creating Service Company Accounting is in accordance with procedures	5	4	4	13
9.		The material provides new knowledge about things that need to be understood before creating Service Company Accounting	5	4	4	13
10.	Media and Visuals	Convenience of learning media users	5	4	5	14
11.		Efficient use of media	5	5	5	15
12.		The attractiveness of learning media	5	5	4	14
13.		Completeness of the information presented	5	5	5	15
14.		The information presented is easy to understand	5	5	4	14
15.		Use of direct and clear language	5	4	4	13
16.		Clarity of narrator's instructions	5	5	5	15
17.		Narrator's voice intonation	5	5	4	14
18.		Writing is easy to understand	5	5	5	15

19.		<i>Mobile Aplication</i> arouse interest in learning	5	5	5	15
20.		The lighting in the application is appropriate	5	5	5	15
21.		<i>Mobile learning</i> help overcome learning difficulties	5	5	4	14
22.		The menus inside <i>Mobile Aplication</i> simple and easy to understand	5	4	4	13
<b>AMOUNT</b>			<b>110</b>	<b>103</b>	<b>100</b>	<b>313</b>

It is known in Table:

Overall aspect of individual trials (XI) = 313

Individual trial aspect criteria items = 66

Highest score = 5

Lowest score = 1

For,

Ideal maximum score =  $66 \times 5 = 330$

Shoes minimal ideal =  $66 \times 1 = 66$

Me =  $(1/2) (\text{ideal maximum score} + \text{ideal minimum score}) = 198$

Sbi =  $(1/6) (\text{ideal maximum score} - \text{ideal minimum score}) = 44$

Based on individual trial evaluation data, the average score for all aspects is 313, which is within the score range  $264 < XI \leq 330$ . So, the whole aspect of individual testing is for media mobile application based project based learning This falls into the "Very Decent" category. The percentage of eligibility for individual trials: Qualification 94,84%

### Data from Material Validation Results

Material expert validation mobile applicationbased project based learning The material on Service Company Accounting was carried out by 1 person, namely a lecturer at Medan State University, Accounting Study Program, namely Dr. Jufri Darma, SE, M.Si, Ak, CA. The assessment is carried out to obtain information that will be used to improve the suitability of the media mobile applicationbased project based learning on Service Company Accounting material. The aspects consist of suitability of the material, ease of understanding, ease of access, usefulness of the material, language communication, completeness of the material.

Based on material expert evaluation data, the average score for all aspects is 43, which is within the score range  $39,9 < XI \leq 50$ . So, all aspects of this material fall into the "Very Appropriate" category. The percentage of eligibility for material: Qualification 86%.

### Data analysis

The results of assessments by learning design experts, media experts, material experts, individual trials, small group trials and field trials on all aspects of the overall assessment are determined by the average score in each category. The results of the assessment are then analyzed to determine whether or not the media is worth developing mobile applicationbased project based learning on Service Company Accounting material. . The

average percentage of assessment results from learning design experts, media experts, material experts, individual trials, small group trials and field trials is as follows:

**Table 3. Average Percentage of Assessment Results on Mobile Media application Based on Project Based Learning on Service Company Accounting Material**

No	Categorization	Average score percentage	Criteria
1.	Validation of Learning Design	90,5 %	Very Worth It
2.	Media Validation	85%	Very Worth It
3.	Material Validation	86%	Very Worth It
4.	Individual Trial	94,84 %	Very Worth It
5.	Small Group Trials	94,15 %	Very Worth It
6.	Field Trials	93,96 %	Very Worth It
	<b>Rate-rate</b>	<b>90,74%</b>	<b>Very Worth It</b>

Overall, the average percentage falls into the "Very Appropriate" category, which means media utilization mobile application based project based learning on Service Company Accounting material to meet student needs.

Based on the research that has been carried out on the learning outcomes of Service Company Accounting, it can be seen that the score for the learning outcomes of Service Company Accounting with the media mobile application based project based learning The lowest score was 66 and the highest score was 97, average score  $XI = 83.09$ , standard deviation (SD) = 8.129.

To see student scores, interval classes are used, namely scores between absolute frequencies, namely the number of students who have learning outcome scores, and relative frequencies, namely the percentage of learning outcome scores. An overview of the learning outcomes of Service Company Accounting using media mobile application based project based learning can be seen in Table below:

**Table 4.12 Learning Results Learning Results for Service Company Accounting Using Media Mobile applicationBased Project Based Learning**

CLASS	CLASS INTERVALS	Q. ABSOLUTELY	F. RELATIVE %
1	66-71	1	3.2
2	72-77	6	19.4
3	78-83	10	32.3
4	84-89	4	12.9
5	90-96	9	29.0
6	97	1	3.2
<b>AMOUNT</b>		<b>31</b>	<b>100</b>

## Discussion

### Discussion of Product Feasibility Test Research Results

Media development mobile application carried out based on the stages as contained in the procedure. The development results are then carried out by a feasibility test or validation

by a predetermined expert. Based on the results of the validation carried out, the media product mobile application declared fit to continue in student trials. Media mobile application developed has met standards based on the design of media development standards and learning material standards.

The product development research carried out is directed at producing a product in the form of media mobile application for class XI students at SMK Negeri 1 Sei Suka, Batubara Regency, which is used to improve the learning process and student competency. Revised and refined aspects are based on data analysis and trials as well as input from material experts, learning design experts, learning media experts. This aims to explore several aspects that are common in the product development process.

The results of the assessments submitted by several experts and student tests are seen in Table 4 below.

No	Categorization	Average score percentage	Criteria
1.	Validation of Learning Design	90,5 %	Very Worth It
2.	Media Validation	85%	Very Worth It
3.	Material Validation	86%	Very Worth It
4.	Individual Trial	94,84 %	Very Worth It
5.	Small Group Trials	94,15 %	Very Worth It
6.	Field Trials	93,96 %	Very Worth It
	<b>Rate-rate</b>	<b>90,74%</b>	<b>Very Worth It</b>

According to the responses of students at SMK Negeri 1 Sei Suka, Batubara Regency in the field trial, it was stated that the media mobile application those developed are included in the "very feasible" category, with an average percentage of 93.96%, this is in line with current learning activities that emphasize process skills and active learning, so learning media is becoming increasingly important (Nurseto, 2011). From the discussion above it can be concluded that media development mobile application suitable for use for learning. Media mobile application This can be used as the main media in class XI Accounting learning material Service Company Accounting.

### **Discussion of Product Effectiveness Test Research Results**

From the results of the research data processing carried out, there is an average learning outcome for Service Company Accounting after using Media mobile application for class XI students at SMK Negeri 1 Sei Suka, Batubara Regency, it was 78.19. Meanwhile, the results of learning Service Company Accounting before using Media mobile application 83.09. From this data it proves that Media mobile application feasible and effective to use in improving student competence, this is in line with Project Based Learning, which is learning that places more emphasis on solving authentic problems that occur every day.- days through direct practical learning experiences in the community (John, 2008:374).

According to Arsyad (2011:35) the benefits of using learning media in the teaching and learning process are as follows: (1) Learning media can clarify the presentation of messages and information so that it can facilitate and improve learning processes and outcomes. (2) Learning media can increase and direct children's attention so that it can create learning motivation, more direct interaction between students and their environment, and the

possibility for students to learn independently according to their abilities and interests, (3) Learning media can overcome sensory limitations, space, and time, and (4) Learning media can provide students with a common experience regarding events in their environment.

From Arsyad's explanation about the benefits of media, it can be concluded that learning media has benefits as a learning media as stated by Arsyad (2011) so that learning media can improve student learning outcomes. Media Use mobile application allows students to understand learning more easily and understand the material better because of the media mobile application. This allows students to be able to understand the material presented with the media content mobile application which is designed to be as attractive as possible so that students can better understand the material presented.

## CONCLUSION

Based on the results and discussion of media development research Mobile Application carried out, it can be concluded as follows:

1. Media Mobile Application with Service Company Accounting material suitable for use with material expert validation presentations 86% in the "very feasible" category, media expert validation 85% in the "very feasible" category, 90.5% learning design expert validation in the "very feasible" category. 94.84% of individual trials were in the "very feasible" category, 94.15% of small group trial results were in the "very feasible" category. 93.96% of field trials were in the "very feasible" category.
2. Student Service Company Accounting learning outcomes taught using media Mobile Application higher than the learning outcomes of Service Company Accounting for students taught without media Mobile Application which is tested through the t statistical test with the test results showing the value of  $t_{count} 4.43 > 1.671$ . Based on the results of this research, data was also obtained on the average scores of students who were taught using media Mobile Application higher than the average score of students taught without media Mobile Application.

Based on conclusions and findings in media development research Mobile Application, this has high implications. First, the results obtained from this research show that student learning outcomes are taught using media Mobile Application higher compared to not using conventional media. Thus, media Mobile Application more appropriate to use in learning, implications of the application of media Mobile Application. For teachers, teachers are obliged to always try to utilize learning media which is of course related to the subject matter to be discussed, therefore teachers are expected to expand and increase their knowledge. Therefore, it is necessary to hold seminars and training to increase the insight and skills of teachers in improving student learning outcomes and using media Mobile Application.

Second, there needs to be suitability of the choice of learning media with the material being taught. By choosing the right learning media, it will make the learning process more interesting and meaningful. Although each learning media certainly has its own advantages and disadvantages, the results of this research can be a consideration in using learning media to improve student learning outcomes.

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