DEVELOPMENT OF INTERACTIVE LEARNING MODULE IN COMPUTER ACCOUNTING SUBJECT TO IMPROVE STUDENT MOTIVATION

PENGEMBANGAN MODUL PEMBELAJARAN INTERAKTIF MATA PELAJARAN KOMPUTER AKUNTANSI UNTUK MENINGKATKAN MOTIVASI BELAJAR SISWA

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Abstract
This research aimed to develop Interactive Learning Module in Computer Accounting Subject for class XI Accounting SMK Negeri 1 Yogyakarta with basic competency materials Making Financial Statements Using Spreadsheet; to know the feasibility of media based on assessment by material expert, media expert, accounting teacher, and students; and to know the improvement of student motivation. This research was Research and Development (R&D) adapted from ADDIE development model i.e.: 1) Analysis, 2) Design, 3) Development, 4) Implementation, and 5) Evaluation. The research results showed that Interactive Learning Module declared as Strongly Feasible category with average scores 4.25 by material expert, 4.34 by media expert, 4.34 by accounting teacher, and 4.23 by students. Based on Student Motivation analysis, obtained an increase of 5.7% from 70.43% to 76.13%. In the paired sample t-test obtained empirical t -5.654 with sig. 0.000 which showed significant measurement, so the Interactive Learning Module can improve the students' learning motivation.

Keywords: Learning Media, Interactive Learning Module, Spreadsheet, Learning Motivation.

Abstrak
*Penelitian ini bertujuan untuk mengembangkan Media Pembelajaran berupa Modul Pembelajaran Interaktif Komputer Akuntansi untuk kelas XI Akuntansi SMK Negeri 1 Yogyakarta dengan materi kompetensi dasar Membuat Laporan Keuangan Menggunakan Paket Program Pengolah Angka/*Spreadsheet*; mengetahui kelayakan Modul Pembelajaran Interaktif berdasarkan penilaian ahli materi, ahli media, guru akuntansi, dan siswa; serta mengetahui peningkatan motivasi belajar siswa. Penelitian ini menggunakan metode penelitian dan pengembangan yang diadaptasi dari model pengembangan* ADDIE *yaitu: 1)* Analysis, *2)* Design, *3)* Development, *4)* Implementation, *dan 5)* Evaluation. *Modul Pembelajaran Interaktif termasuk dalam kategori Sangat Layak dengan skor rata-rata oleh ahli materi 4,25, oleh ahli media 4,34, oleh guru akuntansi 4,34, dan oleh siswa 4,23. Berdasarkan analisis Motivasi Belajar Siswa sebelum dan sesudah penggunaan media diperoleh peningkatan sebesar 5,7% dari 70,43% menjadi 76,13%. Pada uji t berpasangan diperoleh t hitung sebesar -5,654 dengan sig. 0,000 menunjukkan pengukuran signifikan, sehingga kesimpulannya adalah pengembangan Modul Pembelajaran Interaktif dapat meningkatkan Motivasi Belajar Siswa.*

Kata kunci*: Media Pembelajaran, Modul Pembelajaran Interaktif,* Spreadsheet, *Motivasi Belajar*.

INTRODUCTION

One of the manifestations of human culture is education that is dynamic and grows. Changes or the development of education is a thing that is supposed to happen in line with the demands of a better future. The development of education can't be separated from the development of information technology. The development of information technology has changed the lives of human beings from conventional to modern.

Technological development continues to encourage progress in the field of education. The growing use of technology in the field of education has a positive impact on learning activities. The learning process becomes more interesting because it uses advanced facilities and learning can be done everywhere and everytime (Risnawati, 2015: 1). Learning using technology can be easier to achieve the learning objectives because essentially the technology is a tool that makes it easy to human.

The purpose of learning is to achieve changes in behavior or competence in students after participating in learning activities. To achieve these objectives, the student must have the motivation or encouragement to learn and follow the learning process. According to Sanjaya (2013: 135) motivation can be interpreted as a boost that allows students to take action and do something. Motivation is a very important aspect of learning, without the motivation, students do not have the willingness to learn. In student self, there are two factors that influence student motivation, there are internal factors and external factors. Internal factors are cause by the student itself, such as laziness and do not pay attention to the teacher during the learning process. External factors are factors that come from the environment outside the individual that affect the motivation to learn, for example, not conducive learning environment, ineffective learning methods, learning media less attractive, and so on. Generating motivation from both internal and external are part of the roles and duties of teachers in each of the learning processes.

The use of learning media can increase the motivation to learn. According to Sadiman, et al (2011: 7) media is everything that can be used to deliver a message from the sender to the receiver so it can stimulate thoughts, feelings, and interests as well as the student's attention such that the learning process occurs. Learning media can enhance student learning process that expected to enhance the learning outcomes achieved.

SMK Negeri 1 Yogyakarta is one of Vocational High School of Business and

Management in Yogyakarta, which has three Skills Competency namely Accounting, Marketing, and Administration Office. Each program has skill competencies that must be mastered by each student.

Basic competence making financial statements using a spreadsheet is one of the competencies that must be mastered by Vocational High School students majoring in Accounting. These competencies are regarded as core competencies or major competencies in Computer Accounting Subject that required a deep level understanding for students. These competencies are considered to be quite difficult for the students. The difficulty is that students should be completely familiar with the steps and formulas functions that must be entered into the spreadsheet. Therefore, teachers should provide a media that can help students understand the flow or the steps to make those financial statements.

SMK Negeri 1 Yogyakarta has facilities in learning to support student competencies. In this school has provided computer laboratory as a practice place of the students, including the practice of Computer Accounting in Accounting Skills Competency. Teacher as a facilitator in education is also provided with the ability to use technology for learning media.

Computer Accounting learning process at SMK Negeri 1 Yogyakarta has not implemented information technology and communication in the form of computer-based media, and the lack of interactive learning media development. Learning media used are still monotonous, causing students bored and learning becomes less than optimal. Media used in the form of textbooks and slide presentation. The book contains theories and steps or tutorial using a computer accounting program. Teachers tend to use lecture methods and demonstrations. Demonstrations conducted by the teacher to guide students to understand the material by displaying computer accounting program that is being run using the LCD and projector. This is a challenge for students who can't follow the steps described by the teacher because of time and teachers judged too quickly explain the steps.

Based on observations conducted on April 11, 2016, in Class XI AK 1 SMK Negeri 1 Yogyakarta, it was found that the student motivation was low. Could be seen from the number of students who wanted to ask the teacher only by 17%, or 6 out of 32 students. Students who noted the important points of learning only by 37.5%, or 12 students. Students who talked about things outside of lesson during learning process were 13 students or 36%. Besides that,

students were still lazy, seen from some students who did not immediately go to class when the bell rang, students were sleepy, laid their heads on the table, and did not open the book learning package. From the results of observations made by researchers, it is concluded that the learning activities at SMK Negeri 1 Yogyakarta require a technology-based learning media interactive and interesting for the students to improve student motivation. The existence of learning media in teaching methods is one of the efforts to improve the interaction between teachers and students and students with learning environments.

One of the media that can be used as an alternative is a learning module. The module can be viewed as a package program that is organized in the form of specific units for the purpose of learning. In fact, the module is a kind of unity of planned learning activities, designed to help individual learners achieve their learning goals (Sukiman, 2012: 131). Learning module will further improve student motivation when made with features that support interaction in the learning process. Therefore, Interactive Learning Module created with computer software that students can use to learn independently and it used by teachers as a learning presentation media.

Based on the above problems, it is necessary to do research to develop Interactive Learning Module in Computer Accounting Subject to improve student motivation of Class XI AK 1 in SMK Negeri 1 Yogyakarta with an attractive design and easy to understand by students. In addition, the use of Interactive Learning Module can be used as an alternative to improve the quality of learning process Computer Accounting Subject.

RESEARCH METHOD

This research was a method of Research and Development used ADDIE model, developed by Dick and Carey (1996) i.e. a development model that consists of five stages which include Analysis, Design, Development, Implementation, and Evaluation. According to Sugiyono (2015: 407), methods of research and development is the research methods used to produce a specific product and test the effectiveness or feasibility of such products.

The subject of research involved were one media expert, one material expert, accounting teacher, and students of XI AK in SMK Negeri 1 Yogyakarta. Meanwhile, the object of research was feasibility of interactive module and student motivation improvement after used these media.

The procedure of this research adapted ADDIE development model that consists of five stages, i.e. analysis, design, development, implementation, and

evaluation as revealed by Mulyatiningsih (2011:185-186).

Data collection techniques in this research were using questionnaires. The questionnaire is a data collection technique is done by giving a set of questions or a written statement to the respondent (Sugiyono, 2015: 199). Questionnaire on this development research used to obtain data from media expert, material expert, accounting teacher, and students to evaluate the learning media that was developed.

The collected data analyzed to determine the judgments or opinions of the product and increasing student motivation. Data obtained from the material expert, media expert, accounting teacher, and students in the form of media feasibility data and improvement student motivation data, as follows:

Media Feasibility Data

Data were obtained from a questionnaire filled by media expert, material expert, accounting teacher, and students. Then the data were analyzed by following steps:

1. Transformed qualitative data into quantitative data by provisions:

Table 1. Scoring Rules with Likert Scale

Classification	Score
Very Good	5
Good	4
Enough	3
Bad	2
Very Bad	1

Source: Sugiyono (2015: 135)

2. Calculated the average score of each aspect using the following formula:

$$\overline{X} = \frac{\sum X}{N}$$

Descriptions:

Score	Interval Score	Category
5	$\overline{X} > \overline{X}_t + 1{,}8$ SDi	Strongly Feasible
4	$\overline{X}_t + 0{,}6$ SDi $< \overline{X} \leq \overline{X}_t + 1{,}8$ SDi	Feasible
3	$\overline{X}_t - 0{,}6$ SDi $< \overline{X} \leq \overline{X}_t + 0{,}6$ SDi	Moderately Feasible
2	$\overline{X}_t - 1{,}8$ SDi $< \overline{X} \leq \overline{X}_t - 0{,}6$ SDi	Unfeasible
1	$\overline{X} \leq \overline{X}_t - 1{,}8$ SDi	Strongly Unfeasible

$\overline{X}$ = average score
$\sum X$ = total score
N = item field subject
(Sukardjo, 2005: 52)

3. Interpreted qualitative average value of each aspect and all aspects by using the following criteria:

Table 2. Converting Quantitative Data to Qualitative Data

Description:
$\overline{X}$ = actual score (score obtained)
$\overline{X}_t$ = ideal mean = 1/2 (ideal maximal score + ideal minimal score)
SDi = ideal standar deviation = 1/6 (ideal maximal score - ideal minimal score)
(Sukardjo, 2005: 53)

Improvement Student Motivation Data

Data filled by students before and after using learning media in the form of interactive module using Lectora Inspire Software. Then data analyzed by following steps:

1. Analyzed quantitative data scores descriptively with a conversion table values as follows:

   Table 3. Criteria Scoring Items on the Motivation Questionnaire

Criteria	Score	
	Positive	Negative
Strongly Agree	5	1
Agree	4	2
Less Agree	3	3
Disagree	2	4
Strongly Disagree	1	5

   Source: Sugiyono (2015: 135)

2. Calculated the scores for each aspect of motivation.
3. Calculated the scores of the student motivation every aspect with formula:

$$\%\ \text{motivation score} = \frac{\text{motivation score}}{\text{max. score motivation}} \times 100\%$$

   Improvement learning motivation occurs when the final motivation score was greater than the initial motivation score.

4. Then tested with t test using paired sample formula. Researcher used paired sample formula because the grup (sample) was same i.e. students of class XI AK 1. The calculation was value of empirical t matched with t_{table} at a significance level of 5%. If empirical t is greater than t_{table}, so there is a significant difference.

$$t = \frac{\overline{D}}{\left(\frac{S}{\sqrt{N}}\right)}$$

   Description:
   $\overline{D}$ = the average margin of 2 scores
   SD = the standard deviation of the price D
   N = total pairs

(Danapriatna & Setiawan, 2005: 108-110)

FINDING AND DISCUSSION

Description of Research Subjects

The subjects of this development research were validator and students. Here is the list of research subject:

Table 4. List of Research Subject

No.	Subject	Name
1.	Material Expert	Rizqi Ilyasa Aghni, M.Pd.
2.	Media Expert	Estu Miyarso, M.Pd.
3.	Accounting Teacher	Marsono, S.Pd.
4.	Accounting Students	a. 32 student of XI AK 2 in SMK Negeri 1 Yogyakarta as the field try out student. b. 32 student of XI AK 1 in SMK Negeri 1 Yogyakarta as the object implementation research (measurement learning motivation)

Result of Research and Development

Development of Interactive Learning Module

The implementation of development research was conducted by five stages of the ADDIE Model with the following details

1) Analysis Stage, the activities in this stage are: Curriculum Analysis, Subject Analysis and Purpose Formulation.
2) Design Stage, the activities in this stage are: Material Arrangement, Flowchart

Media, Story Board, Lesson Plans, and Making Questionnaire and Test the Learning Motivation Instrument (Validity and Reliability Test).

3) Development Stage, the activities in this stage are: Making Interactive Learning Module, Expert Validation, Product Revision I, Accounting Teacher Validation, and Product Revision II.
4) Implementation stage, the activities in this stage are: Field Trying Out in Class XI AK 2 and See students' response.
5) Evaluation stage, the activities in this stage are: Measurement Learning Motivation in Class XI AK 1.

Feasibility of Interactive Learning Module

Feasibility of Interactive Learning Module was known through the stages of validation by experts. The researcher chose the validator which consists of one Material Expert, one Media Expert, and one Accounting Teacher. Data collection instruments used media feasibility question form at scale of 1-5. More explanation is as follows:

1) Material Expert

Tabel 5. Result of Validation Media by Material Expert

No	Feasibility Aspect	Score	Average	Category
1	Material	75	4,41	Strongly Feasible
2	Language	13	4,33	Strongly Feasible
3	Learning Design	24	4	Feasible
	Total	**112**	**4,25**	**Strongly Feasible**

According to Table 2, about the conversion of quantitative data into qualitative data, it is known that the average score (X) 4.25 lies in the range of 4.20 > X <5, which means that the products developed in the category "Strongly Feasible". The results of the validation by material expert indicate that Interactive Learning Module that was developed based on assessment material aspects, language, and learning design is strongly feasible tested based on advice and comments from material expert.

2) Media Expert

Tabel 6. Result of Validation Media by Media Expert

No	Feasibility Aspect	Score	Average	Category
1	Software Engineering	34	4,25	Strongly Feasible
2	Visual Communication	62	4,43	Strongly Feasible
	Total	**98**	**4,34**	**Strongly Feasible**

According to Table 2, about the conversion of quantitative data into qualitative data, it is known that the average score (X) 4.34 lies in the range of 4.20 > X <5, which means that the products developed in the category "Strongly Feasible". The results of the validation by media experts shows that Interactive

Learning Module that was developed based on the evaluation aspects of software engineering and visual communication is strongly feasible tested based on advice and comments from media experts.

3) Accounting Teacher

Table 7. Result of Validation Media by Accounting Teacher

No	Feasibility Aspect	Score	Average	Category
1	Material	46	4,6	Strongly Feasible
2	Language	9	4,5	Strongly Feasible
3	Learning Design	25	4,17	Feasible
4	Software Enginee-ring	12	4	Feasible
5	Visual Communi-cation	31	4,43	Strongly Feasible
	Total	**123**	**4,34**	**Strongly Feasible**

According to Table 10, about the conversion of quantitative data into qualitative data, it is known that the average score (X) 4.34 lies in the range of 4.20 > X <5, which means that the products developed in the category "Strongly Feasible". The results of the validation by accounting teacher show that Interactive Learning Module are developed based on assessment material aspects, language, learning design, software engineering and visual communication is strongly feasible tested based on the advice and comments from accounting teacher.

Interactive Learning Module

This is view of Interactive Learning Module:

Figure 1. Home Page

Home page consists of six menu i.e: 1) Petunjuk, 2) Kompetensi, 3) Materi, 4) Uji Kompetensi, 5) Pustaka, and 6) Profil.

Figure 2. Material Page

Material page consists of the material covered in the module and examples of questions that will be discussed.

Figure 3. Competency Test

Competency Test section contains three types of questions, there are: *Mengurutkan*, *Benar Salah*, and *Pilihan Ganda* and also

give scores which obtained by students after doing the test.

Students' Response About Interactive Learning Module

Student of XI AK 2 SMK Negeri 1 Yogyakarta consist of 32 students becomes the subject of field trials Development of Interactive Learning Module. Each student is gave their assessment sheet which is expected to give a response to the appropriateness of Interactive Learning Module.

Table 8. Result of Students' Response about Media

No	Feasibility Aspect	Score	Average	Category
1	Material	555	4,34	Strongly Feasible
2	Language	134	4,19	Feasible
3	Learning Design	567	4,43	Strongly Feasible
4	Software Enginee-ring	374	3,90	Feasible
5	Visual Communi-cation	827	4,31	Strongly Feasible
Total		**2,457**	**4,23**	**Strongly Feasible**

According to Table 2, about the conversion of quantitative data into qualitative data, it is known that the average score (X) 4.23 lies in the range of $4.20 > X < 5$, which means that the products developed in the category "Strongly Feasible". The results of the students' response questionnaire shows that Interactive Learning Module that was developed based on the assessment material aspects, language, learning design, software engineering, and visual communication is strongly feasible to use as a learning media.

Improvement Student Motivation After Using Interactive Learning Module

The purpose of making the products is to increase students' motivation in class XI AK 1. Measurement of motivation performed on 7 and 14 November 2016 in class XI AK 1 that consist of 32 students.

Increased Student Motivation can be seen from the measurement results initial motivation and final motivation with Likert Scale. The questionnaire contains 16 items graded valid questions with details of 10 positive statements and 6 negative statement. Questionnaire reliability test result with Cronbach's Alpha was 0.833. According to Table 8, research instrument has a very strong reliability because the value of the reliability coefficient ≥ 0.80.

Filling initial motivation questionnaire that has been validated, conducted before students use the Interactive Learning Module. Filling final motivation questionnaire conducted after the end of the students using the Interactive Learning Module. Two results of motivation before and after the use of media compared, so it can be seen scores increase student motivation.

Table 9. Recapitulation of Student Learning Motivation Result

No	Learning Motivation Indicator	Learning Motivation		Improvement
		Before	After	
1	There is a passion and desire to succeed	75%	79%	4%
2	The drive and the need to learn	81%	87%	6%
3	There is hope and ideals of the future	74%	79%	5%
4	There is award in learning	66%	71%	5%
5	The interest activity in learning	64%	75%	11%
6	There is a conducive learning environment	64%	70%	6%
	Total	**70,43%**	**76,13%**	**5,7%**

Based on the initial and final measurement of Learning Motivation, it can be concluded that the development of Interactive Learning Module can increase students' motivation to learn accounting with an increase of 5.7% from the score of motivation before the use of 70.43% and the score of motivation after use of 76.13%.

Seen from the sequence increase learning motivation largest of the six indicators, the biggest improvement contained in the indicator "The interest in learning activity" with a score of 11%. The second sequence is an indicator of "The drive and the need to learn" and "There is a conducive learning environment" with the same score of 6%. The third sequence is an indicators "There is hope and ideals of the future" and "There is award in learning" with the same score by 5%. The fourth sequence is the indicator "There is a passion and desire to succeed" with a score of 4%.

Table 10. Result Recapitulation of Paired Sample Statistic

	Mean		Correlation	Sig.	T	Sig. (2-tailed)
	Before	After				
Pair 1	56.34	60.91	.620	.000	-5.654	.000

Paired sample statistics tables were showing the results of the calculation of the average score total initial motivation was 56.34 while the final motivation score was 60.91. Table of paired sample correlations showed that the correlation between two variables was 0.620, with sig 0.000. That was, the correlation between the total motivation score before and after the use of Interactive Learning Module is accurate and significant. If empirical $t \geq$ t-table then the hypothesis H_0 is rejected, otherwise earned Ha hypothesis. On testing the t-test obtained empirical t was -5.654 with sig (p) = 0.000. Because empirical t > t table (0.68249) and $p < 0.05$ then it indicated that H_0 rejected and Ha accepted. This showed the development of the Interactive Learning Module will show the motivation of studying accounting. Interactive Learning Module will affect the score students' Learning Motivation.

CONCLUSIONS AND RECOMMENDATION

Conclusions

Based on research result and discussion it can be inferred that:

1. The development of Interactive Learning Module is done through the five stages, they are: Analysis, Design, Development, Implementation, and Evaluation.
2. The level of feasibility of Interactive Learning Module known based on expert assessment (material expert, media expert, and accounting teacher) of the materials and media that includes experts on material, language, learning design, software engineering, and visual communication. The results of the validation show that the Interactive Learning Module as a learning media declared as Strongly Feasible category with average scores 4.25 by material expert, 4.34 by media expert, and 4.34 by accounting teacher.
3. The response of the students of class XI AK 2 (field try out) about Interactive Learning Module on the material, language, learning design, software engineering, and visual communication aspects obtained average value of 4.23 with the category of Strongly Feasible.
4. Interactive Learning Module can increase the learning motivation of students class XI AK 1, it can be measured from acquisition of students' recapitulation of 70.43% for the score of initial motivation. While the score the final motivation of 76.13%. The results of the t test show that empirical t was -5.654 with sig. 0.000 shows significant measurements. Thus it can be concluded the development of Interactive Learning Module can improve students learning motivation.

Recommendation

Based on the development research and the researcher' weakness in developing Interactive Learning Module as a media of learning still has many shortcomings. Then the researcher offer suggestions as follow:

1. Teachers better develop Interactive Learning Module in order to spur and improve student motivation.
2. This Interactive Learning Module can be used as a helping tool when learning process is taken place so that the students' may became more active, creative, effective, and enthusiastic.
3. Interactive learning module could be develop with adding more Basic Competencies.
4. Interactive Learning Module could be develop by using wider sample testing to get better result.
5. Exercises better validated before presented in the Interactive Learning

module in order to prove the quality of questions.

6. For further research needs to be done action research or experimental research involving the control class to actually measure the effectiveness of the use of Interactive Learning Module.
7. It need for further development of Interactive Learning Module that can be used not only for the computer/laptop but also can be used in mobile phones.
8. For further research better use data collection techniques not only questionnaire, but also using interview or observation.

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