DEVELOPING EDUCATIVE *GAME* TAXACA QUIZ AS A LEARNING MEDIA OF TAX ACCOUNTING SUBJECT FOR XI ACCOUNTING CLASS SMK YPKK 1 SLEMAN

PENGEMBANGAN GAME EDUKATIF TAXACA QUIZ *SEBAGAI MEDIA PEMBELAJARAN MATA PELAJARAN AKUNTANSI PAJAK KELAS XI AKUNTANSI SMK YPKK 1 SLEMAN*

Oleh: **Kharisa Rachmi Khoirunisa**
Prodi Pendidikan Akuntansi, Universitas Negeri Yogyakarta
kkharieezha@rocketmail.com
Endra Murti Sagoro, M.Sc.
Staf Pengajar Jurusan Pendidikan Akuntansi Universitas Negeri Yogyakarta

Abstract
The research aims to develop educative game and to know the feasibility of educative game TAXACA QUIZ based on the assessment of material expert, media expert, tax accounting teacher and also to know the feasibility of educative game TAXACA QUIZ based on students responses. The type of research is Research and Development with adopting the Borg and Gall research model. Borg and Gall method consists of five steps which are research and information collecting, planning, develop form of product, preliminary field testing and dissemination and implementation. Validation of educative game was done by material expert, media expert, and tax accounting teacher of SMK YPKK 1 Sleman. Media was tested in personal testing, small group testing and field testing. This research was used Descriptive Statistics to analyze data. The result of this research prescaled that the media is feasible to use and proven by validation from three material expert got score 4,27 with "Totally Feasible" category, two media expert got score 4,33 with "Totally Feasible" category, and from tax accounting teacher got score 4,6 with "Totally Feasible" category. Responses from students got score 4,5 with "Totally Feasible" category.

Keyword : Educative Game, TAXACA QUIZ, Android

Abstrak
Penelitian ini bertujuan untuk mengembangkan dan *mengetahui kelayakan* game *edukatif TAXACA QUIZ menurut ahli materi, ahli media dan guru akuntansi serta mengetahui kelayakan* game *edukatif TAXACA QUIZ berdasarkan respon dari siswa. Penelitian ini merupakan penelitian dan pengembangan (*Research and Development*) dengan mengadopsi model pengembangan Borg and Gall yang terdiri dari lima tahap diantaranya pengumpulan informasi, perencanaan, pengembangan desain awal, uji coba serta produk akhir dan penyebaran. Validasi media pembelajaran dilakukan oleh ahli materi, ahli media dan praktisi pembelajaran akuntansi (guru akuntansi pajak di SMK YPKK 1 Sleman). Media yang dikembangkan diujicobakan melalui uji coba perorangan, uji coba kelompok kecil dan uji coba lapangan. Teknik analisis data yang digunakan adalah Analisis Statistik Deskriptif. Hasil penelitian ini menunjukkan bahwa media layak untuk digunakan, terbukti dengan validasi oleh tiga ahli materi yang mendapat nilai rata-rata 4,27 dengan kategori "Sangat Layak", dua ahli media yang mendapatkan nilai rata-rata 4,33 dengan kategori "Sangat Layak" dan praktisi pembelajaran akuntansi mendapat nilai rata-rata 4,6 dengan kategori "Sangat Layak" serta respon dari siswa yang mendapat nilai rata-rata 4,5 dengan kategori "Sangat Layak"*.

Kata kunci : *Game* Edukatif, TAXACA QUIZ, Android

INTRODUCTION

The development of science and technology bring the changes in the human's life. The progress of science and technology also give impact in education field, such as the uses of learning media in the school or another education institution. Science and technology drive the learning process being more applicative and fun so that increased the education quality. In general, the learning process that took place today is the conventional learning, which the learning and teaching face-to-face primary role or even dominate the learning process. That method give impact to the students; being passive, easily saturated, lack of initiative, and too dependent on teacher.

One of the success education indicator is the formation of individuals capable and self-reliant through a learning process. Learning is a process of change in behavior through experience (Wina Sanjaya, 2012: 198). The experience can be direct or non-direct experience. Direct experience is the experience which obtained by the students through the activity that doing by themselves on the real situation. Direct experience of this kind is a learning process that is beneficial. Students can understand exactly what is happening in these activities so as to prevent the student from the wrong perception because students actually experience it for themselves.

Attempts to reach the level that can produce someone who is qualified is through learning. Achievement of the learning process is indicated by a change in a better behavior which are changes in knowledge (cognitive), skills (psychomotor), as well as those concerning values and attitudes (affective). Achievement of these changes are influenced by various factors, teachers, student itself, environment, teaching methods and learning media.

Learning is a process of interaction of students with teacher and learning resources in a learning environment (UU No. 20 Tahun 2003, Bab I Pasal I Ayat (20)). The success of the learning process is determined by three major aspects of learners (students), educators (teachers) and learning resources (material / teaching materials) and another aspect such as parents and also school. All these elements should be mutually supportive learning process. Aspects of educators (teachers) as a party to act as a facilitator is expected to create a dynamic learning atmosphere, fun and innovative, and lead to a feeling of comfort for the students to understand the teaching materials.

Aspects of learners (students) as the party that is the subject of learning, is expected to understand the subject material as a whole so as to utilize the knowledge learned properly. The third aspect (learning resources) is a media that acts as an intermediary to transfer materials.

The fact that occur in schools proves that often encountered various problems in the learning process in the classroom. Most of these problems are caused by the lack of harmony between the three main aspects of the learning process mentioned above. Some forms of the problems that often arise in the learning process including; verbal, misinterpretation, unfocus, misunderstanding, and there is no logical thought processes ranging from awareness to the emergence of the concept (I Wayan Satyasa, 2007: 5).

Various problems in the learning process mentioned above are caused by non-optimal two-way communication process between educators and learners in the learning process. The learning process is a process of communication that takes place in a system of learning while learning media is quite important position as one of the components of the system (I Wayan S, 2007: 3). Without the media, communication will not occur and the learning process as a communication process will not take place optimally. The important position of the media, will take effect on the learning process in all branches of science in accordance with the characteristics of each science.

Utilization of learning media can be applied in all subjects, including in Tax Accounting subject. Usually, in the Tax Accounting learning process, teacher will dictate the material beforehand and the students write, then the teacher will explain the material, and the material is completed after the teacher will give exercises. In fact, Tax Accounting materials in class XI more examine the theory of taxation with a little count material on the last Basic Competency. The material that consist of so much theory make Tax Accounting quite difficult for students to understood, moreover the monotonous method that used by the teacher, make students bored. It is a challenge for teachers to be able to create learning interesting and fun. A fun learning can be created through the use of various models or methods of learning or by using interactive learning media so as to make the students eager to learn and easier to understand the material.

One way of creating a fun learning is by the use of learning media. Based on Rossi dan Briedle (1996) on Wina

Sanjaya (2013: 163) learning media are all tools and materials that can be used to achieve educative goals, while interactive means of active mutual (http:kbbi.web.id/interaktif). Thus it can be understood that the interactive learning media are all tools or materials to achieve learning goals that can engage students actively involved in the learning process.

There are various forms and ways to develop interactive learning media basen on technology. Refer to the facility owned by the students, interactive learning media that can be developed is Educative Game based on Android that can be run via a mobile phone based on Android. Henry (2010: 53-54) revealed that the edducative game had a positive impact, which are can develop the motor system, perform physical movements, improve neurology development (brain and nervous system), improve cognitive development, and also increase moral, language, social and role development

Based on data from IDC (International Data Corporation) in 2014 Android holds a 84.4% market share of smartphones worldwide, the iPhone operating system is the operating system of the iPhone ranked second with 11.7%, followed by Windows Phone in the rank three at 2.9%, and Blackberry ranked fourth with 0.5% market share. Android's success can not be separated from its open (open source) that can provide the source code of the software for free, so that the developers can develop, and make copies without having to pay any license. Currently, there are many applications available through the Play Store and users can just download and install it in their smartphone.

The development of technology among students gives its own challenges and opportunities, especially for education. These challenges can be seen from the lack of optimal utilization of the gadget. However, there are opportunities that can be exploited by the world of education, one of them through the development of instructional media Educative Game based on Android.

SMK YPKK 1 Sleman is one of the vocational schools are already implementing “Kurikulum Tingkat Satuan Pendidikan”. SMK YPKK 1 Sleman located at Jalan Sayangan 05, Mejing Wetan, Ambarketawang, Sleman, Yogyakarta. This school has a variety of learning facilities that are sufficient to support the learning process. SMK YPKK 1 Sleman is also supported by 46 teaching staff, with 16 classrooms, which consists of X, XI,

and XII classes. In the school year 2016/2017 the school has 729 students consisting of three vocational field, which are Accounting Program, Software Engineering Expertise Program (RPL), and Pharmacy.

Based on observations which done on XI Accounting class in SMK YPKK 1 Sleman comprising two classes of class XI Accounting 1, XI Accounting 2, with the number of students in each class were 33 and 35 students, as a whole already has Android smartphone each, but there is no learning method that utilize Android smartphone. Many students are still use a laptop or even still use book to support their learning in the school. By using the manual book as a learning media will make it difficult for students to bring these devices due to weight and seem to bother.

In addition to the above problems the another problem is teachers still use conventional methods of teaching so that students feel bored when doing learning activities. Educators in these schools still use the speech method, especially in Tax Accounting learning so that students are less interested and prefers to do other things such as chatting with friends. Based on this potential, development of instructional media that utilize a smartphone is by making Educative Game intended for all Android smartphone. The reason is because the Android operating system was transformed into a system that is most widely used on smartphones. Beside more practical and simple, nowadays there are a lot of affordable price of Android smartphone with a range of 1 million rupiah.

Therefore, through this undergraduate thesis, the author was motivated to develop learning media based on Android in the form of Educative Game TAXACA Quiz for Tax Accounting subjects. Learning process through the media would be more practical because could done anywhere and any time so it makes the students more easily in learning. Based on those problem background, researchers interested to conduct research entitled "Developing Educative *Game* Taxaca Quiz as a Learning Media of Tax Accounting Subject for XI Accounting Class SMK YPKK 1 Sleman".

RESEARCH METHOD

The type of the research is *Research and Development* (R&D). This research procedure adopted Borg and Gall research and development of education method (1983: 772). According to Borg and Gall, "*educative research and development (R&D) is a*

process used to develop and validate educative production". The reason of researcher choose Borg and Gall development method because the research and development is done in stages, every step that done is always refer to the step before, especially in the testing step that done in stage to personal, small group testing and field testing so that obtainable a new education product.

The application of Borg & Gall development procedure be adopted with the need from the product and larning material that will be develop. According to those procedure, researcher arrange 5 main steps in this research. First, research and information collection as a preliminary study. Second, planning as a planning procedure. Third, develop preliminiary form of product as preliminary product development step. Fourth, preliminary field testing, main product revision, main field testing, operational product revision, operational field testing, final product revision as testing and respon step. Fifth, dissemination and implementation as a dissemination and impelementation step.

Research was conducted in SMK YPKK 1 Sleman which is located in Sayangan street 05, Mejing Wetan, Ambarketawang, Sleman, Yogyakarta. The subject of this research are validator which consists of three subject material experts (three lecturer from faculty of the Department of Accounting Education), two media expert (lecturer of the Department of Accounting Education YSU and lecturer at the Faculty of Engineering YSU) and one validator from the teacher of Tax Accounting of SMK YPKK 1 Sleman. The other subject is five students on individual testing, 15 students in the small group trial and 48 students on field trials. The object of research is the feasibility of a game.

The techniques used for data collection in this research is a questionnaire. Questionnaire is a technique of data collection was done by members of a set of questions or a written statement to the respondent to be answered (Sugiyono, 2012:199).

Data analyzed as following steps:

1. Converting qualitative data into quantitative scoring of the following conditions :

Table 1. Scoring Rules

Criteria	Score
SS (Strongly Agree)	5
S (Agree)	4
N (Neutral)	3
TS (Disagree)	2
STS (Strongly Disagree)	1

Eko Putro Widyoko (2009: 236) with modification

2. Calculating the average score of each aspect using the following formula (Sukardjo, 2005:52) :

$$\overline{X} = \frac{\Sigma X}{n}$$

Description:
$\overline{X}$ = Average Score
$\sum\chi$ = Total score
N = Total subject

3. The average score obtained qualitatively interpreted using a conversion formula 5 scale score following :

Table 2. Conversion Score Guidelines

Score	Score Interval	Range
1	Totally Feasible	X > 4,20
2	Feasible	3,40 < X ≤ 4,20
3	Moderatel y Feasible	2,60 < X ≤ 3,40
4	Not Feasible	1,80 < X ≤ 2,60
5	Totally Not Feasible	X ≤ 4,20

Source : Sukardjo, 2005: 53

Description :
X = Actual score

RESULT AND DISCUSSION

Research and Information Collecting

1. Need Analysis

Based on observations known to almost all students using Android smartphones. The school also allows the use of smartphones while in school. However, these students owned smartphones not fully utilized, as evidenced when hours of lessons there are some students who use smartphones for things that have no relation to teaching and learning. In fact, if the smartphone facilities used for materials related to learning, then the smartphone will have the added value.

2. Curriculum Analysis

In the analysis phase curriculum, conducted a study of minimum competencies to be achieved by the students. This analysis was conducted to determine the basic competencies that can that can be loaded in a game that will be developed. On Tax Accounting subjects, there are nine basic competencies (KD). Basic competence is then developed into a number of indicators.

Planning

1. Deciding Purpose and Material

Based on preliminary studies conducted then created and assigned the purpose of making the products is to generate media-shaped exciting learning games which are integrated with Tax Accounting subject material fully and systematically. At this stage also cited

reason for selection of the materials presented in the game. This game will load Tax Accounting course materials for a school year. This is done because the handbook text used as a handle students not in accordance with the books that should be used for vocational level students. It is therefore expected than beneficial in the learning process at school, this game can also be a source of independent study students in lieu of a book that was not relevant.

2. Arranging Media Feasibility Assesment Instrument

   The activity in the planning stage is arranging instruments media assessment questionnaire to subject material experts, media experts, learning practitioners (teachers), and students. Questionnaire or questionnaires are used to assess the feasibility of TAXACA QUIZ game. The instrument used consisted of assessing the feasibility of the Likert scale and sheets comments/suggestions.

Develop Preliminary Form of Product

1. Designing Preliminary Design
   a. Arranging the frame of material and question

      Materials and questions are based on basic competencies and learning objectives to be achieved. In accordance with the syllabus for class XI Tax Administration in Accounting, there are 9 subjects being taught in the game. Material presented in the game include Introduction to Taxation, Taxpayer, Tax, Tax Payment, Tax Assessment Letter, Income Tax, Gross Income Reduction, Cost, and Norma calculation. Furthermore, the material is used as a reference framework to formulate questions that are divided into seven quiz with a total of 119 questions.

2. Arranging flowchart

   After arranging the material and material, then the writer compose a flowchart. Flowchart is a flow chart of a game that serves as a reference for writers to create games. Flowchart contains step-playing and the conditions that must be taken of players to play the game or often called gameplay.

3. Making story board

   Story board is a description of each view. Story board is made to describe all the components in each display. Views in the game include: Preface page, menu pages, game pages, page content, page basic competence and profile pages.

4. Making Product Educative Game *TAXACA QUIZ*

   All the components that had been developed at the design stage as skeleton material, material, flowchart and story board prepared.

The process of making educative games TAXACA QUIZ with Android Studio software is described briefly as follows:

a. The first step is to make the interface or design of each page in accordance with the story board game that has been compiled.
b. The second step is to input the material, material, basic competencies and profiles on each page that has been created.
c. Once all the data has been pitch-input, then performed the coding process or incorporate logic so that the game can operate.
d. Backsound addition.
e. After all the process is completed, then the game will be exported into exe form (application).

5. Educative Game TAXACA QUIZ Validation as a Learning Media
   a. Material Expert Validation

      Validation of material is done by three people: three lecturers of Accounting Education is Mrs. Isroah, M.Si, Mrs. Amanita Novi Yushita, M.Si and Mr. Ponty SP Hutama, M.Sc., Ak., CA. Material validation serves to assess and evaluate the feasibility of teaching materials that will be delivered in Tax Accounting game. Validation is done by filling in a questionnaire scale 1-5 are viewed from the aspect of material, language and material.

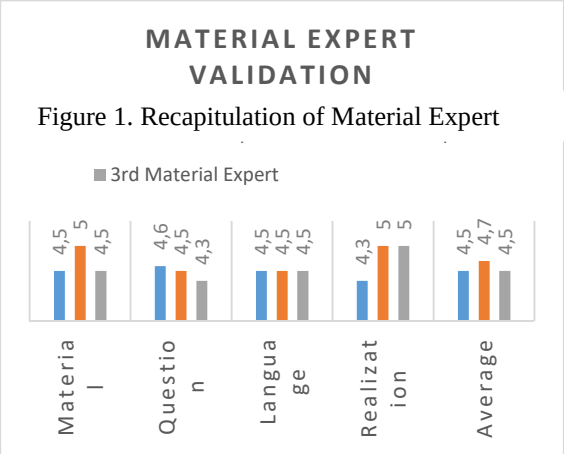

Figure 1. Recapitulation of Material Expert

Figure 1.

6. M2) Media Expert Validation

   Media expert validation conducted by Lecturers of Information Engineering Education, Yogyakarta State University, Mr. Muhammad Izzuddin Mahali, M.Cs and Lecturer of Accounting Education, Mr Rizqi Ilyasa Aghni, M Ed. Media validation conducted to examine and assess the feasibility in terms of media development for further tested. Media validation is done by filling a questionnaire using Likert scale with five alternative answers are Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree. Questionnaire for media experts have 25 assessment indicators that are grouped into two

aspects, namely software engineering and visual communication aspects.

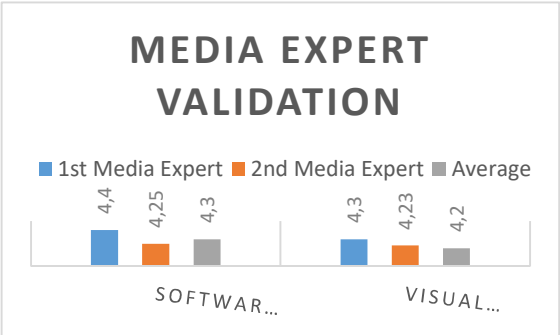

Figure 2. Media Expert Validation

7. Tax Accounting Teacher

The educative game TAXACA QUIZ was validated by Drs. Agus Suharmanto which is Tax Accounting teacher in Tax Accounting XI Accounting class at SMK YPKK 1 Sleman. Media validation conducted to examine and assess the feasibility in terms of media development for further tested. Media validation is done by filling a questionnaire using Likert scale with five alternative answers are Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree. Questionnaire for media experts have 25 assessment indicators are grouped into three aspects, namely software engineering aspects of learning design and visual communication aspects.

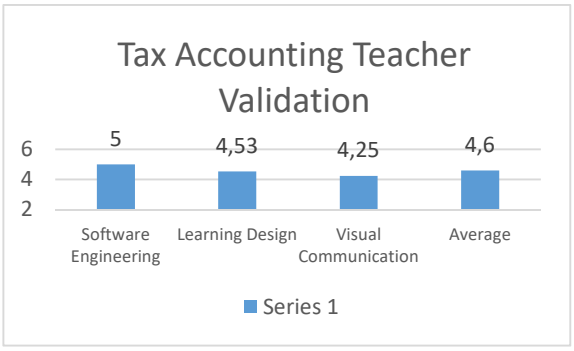

Figure 3. Tax Accounting Teacher Validation

Preliminary Field Testing

Personal Testing

Individual testing is done after the author to revise the game developed based on the results of expert validation of materials and media expert and professor of accounting. Individual testing is done to the five vocational students in class XI Accounting students of SMK YPKK 1 Sleman.

In this test students are required to read instructions for the use of the game, then play the game to learn Accounting Pajak. In the end of the lesson, the five students provide an assessment of the game aspects of software engineering, instructional design and visual communication. The result of the personal testing can be seen in the following chart :

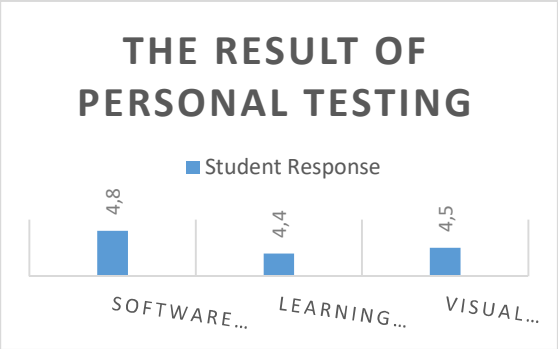

Figure 4. Chart of Personal Testing Result

Results of the assessment by the students on Personal testing showed that educative game TAXACA QUIZ acquire the category of "Totally Feasible" in all aspects. The average overall score (X) obtained by the score of 4.5 which lies in the range of X> 4.20 is "Very Decent". It was concluded that educative games TAXACA QUIZ on personal testing gets the category of "Totally Feaasible", so it can be tested on the next stage of the personal testing step.

1. Small Group Testing

   The small group trial conducted after the author completed an evaluation of the results of assessments on individual testing. The test is done to 15 students of XI Accounting class of SMK YPKK 1 Sleman selected based on aspects of cognitive ability students is high, media and low.

   In this test the students are asked to read the instructions for using the game, after which students are asked to play a game to learn Tax Administration. After playing the game, students were asked to give an assessment of linked gaming aspects of software engineering, instructional design and visual communication. The result of small group testing can be seen on the following chart :

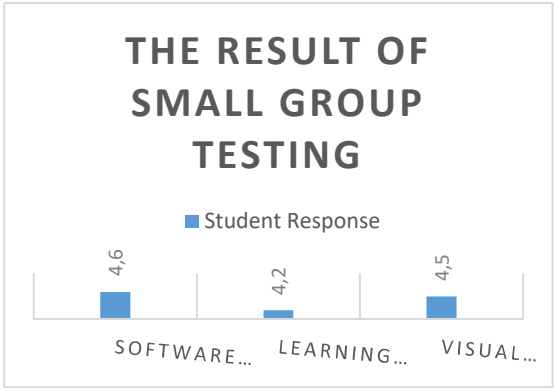

Figure 5 ChFigure 5. Chart of Small Group Testing Result

Based on the assessment of students at the small group trial, the result educative game TAXACA QUIZ acquire the category of "Totally Feasible" on all aspects of evaluation. The average yield of the overall score (X) in the small group trial obtained a score of 4.4 where the score is in the range of X> 4.20 is "Totally Feasible". It was concluded that educative game TAXACA QUIZ on individual testing gets the category of "Totally

Feasible", so it can be tested on the next stage which is the stage of field trials.

2. Field Testing

After revision of assessment of students in small groups has trials are completed, the next stage of educative game TAXACA QUIZ tested in field trials. Field trials conducted on 48 student of XI Accounting class SMK YPKK 1 Sleman. Field trial was conducted to determine the impact of gaming on a broad scale.

In this test students are required to read instructions for the use of the game, then play the game to learn Tax Accounting. At the end of the study, 48 students will give an assessment of the game from the aspect of software engineering, instructional design and visual communication. The result of field testing can be seen in the following chart :

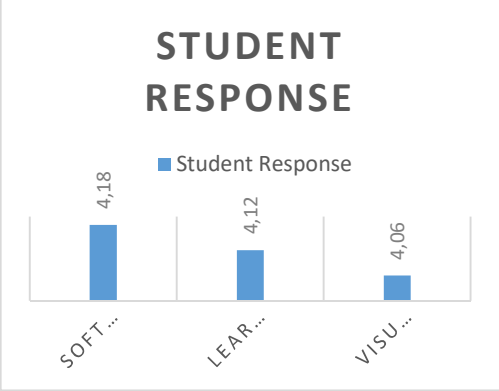

Figure 6. Chart of Field Testing Result

In the testing step of this field, based on the results of student assessment, educative games TAXACA QUIZ get results "Feaasible" categoty on all aspects of evaluation. The average overall score (X) in this field trials obtained a score of 4.12 where the score is in the range of X> 4.20 is "Feasible". It was concluded that educative games TAXACA QUIZ on field testing gets the category of "Feasible", so it can be tested on the next stage which is the stage of field trials.

CONCLUSION AND SUGGESTION

Final media of this research is an Educative Game TAXACA QUIZ. This educative game contains the material about tax accounting. The materials are appropriate with core competence that use for student in the vocational school, especially in the accounting class. The media are deserved in appearance with the blue and orange and an icon of the application.

The conclusion and suggestion of this research are as follows :

Conclusion

1. The development model educative game TAXACA QUIZ as a learning media of Tax Accounting for SMK YPKK 1 Sleman was done using Borg and Gall Model that consist of five main step of development. The first step is research and information collecting. The second step is planning step. The third step is develop preliminary form of product educative game TAXACA QUIZ and then the media was validated and was revised based on the assessment by some experts and accounting learning practiocioner before was implemented. After that, the preliminary field testing step was done by testing the media to the students of SMK YPKK 1 Sleman. The last step of developing media was done by disseminating and implementing the game to the students of SMK YPKK 1 Sleman.
2. Based on the assessment by material expert, the feasibility of the educative game TAXACA QUIZ obtained the average score 4,5 for overall aspect. This result presented that educative game TAXACA QUIZ was considered to be "Totally Feasible" as a learning media used for Tax Accounting subject.
3. Based on the assessment by media expert, the feasibility of the educative game TAXACA QUIZ obtained the average score 4,2 for overall aspect. This result presented that educative game TAXACA QUIZ was considered to be "Totally Feasible" as a learning media used for Tax Accounting subject.
4. Based on the assessment by tax accounting teacher, the feasibility of the educative game TAXACA QUIZ obtained the average score 4,6 for overall aspect. This result presented that educative game TAXACA QUIZ was considered to be "Totally Feasible" as a learning media used for Tax Accounting subject.
5. Based on student response, the feasibility of the educative game TAXACA QUIZ obtained the average score 4,3 for overall aspect. This result presented that educative game TAXACA QUIZ was considered to be "Totally Feasible" as a learning media used for Tax Accounting subject.

Suggestion

1. Educative game TAXACA QUIZ is better used by the teacher for making learning tax accounting more fun.
2. Educative game TAXACA QUIZ is better used by the students to learn by themselves so that it can added their understanding of the material.
3. The question of the game can be develop more and more in each level of the game.

4. It is better if the media was made directly by researcher, so that the consideration and design of media can be done by researcher.

REFERENCES

Arief S. Sadiman, dkk (2009). *Media Pendidikan: Pengertian, Pengembangan, dan Pemanfaatannya*. Jakarta: Rajawali Press.

Azhar Arsyad. (2011). *Media Pembelajaran*. Jakarta: Rajawali Press.

Daryanto. (2010). *Media Pembelajaran: Peranannya Sangat Penting dalam Mencapai Tujuan Pembelajaran*. Yogyakarta: Java Media.

Eko Putro Widoyoko. (2009). *Respon Program Pembelajaran*. Yogyakarta: Diva Press.

IDC (*International Data Corporation*). (2014*). Smartphone OS Market Share*, Q3 2014 yang diakses melalui http://www.idc.com/prodserv/smartphoneosmarket- share.jsp yang diakses pada 1 Oktober 2016 pukul 20.16 WIB.

Romi Satria Wahono (2006). *Aspek dan Kriteria Penilaian Media Pembelajaran.* Diakses dari : https://www.academia.edu/6538479/Aspek-_dan_Kriteria_Penilaian_Media_Pembelajaran diakses pada 9 November 2016.

Samuel Henry. (2010). *Cerdas Dengan Game*. Jakarta: PT Gramedia Pustaka Utama.

Undang-Undang Republik Indonesia Nomor 20 tahun 2003 tentang *Sistem Pendidikan Nasional*, Diakses melalui: http://kemeneg.go.id/file/dokumen/UU2003.pdf. pada tanggal 2 Desember2014 pukul 15.20 WIBWallter R. Borg dan Meredith D. Gall

Wina Sanjaya. (2013). *Strategi Pembelajaran Berorientasi Standar Proses Pendidikan*. Jakarta: Kencana Prenadamedia Group.

Zulfri Adhi Wibowo. (2015). *Pengembangan Game Edukatif Tax Administration Millionaire Quiz Berbasis Adobe Flash sebagai Media Pembelajaran Administrasi Pajak di Kelas XI Akuntansi SMK YPE Sawunggalih Kutoarjo*.Skripsi FE UNY.