Mobile Game Education for Developing Soft Skill of Elementary School Students

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Abstract: One of the proper innovations to develop student's character (soft skill) is through exploring Mobile Game Education. It is an online game application that is operated by using mobile communication devices such as smartphones and tablets. This research aims to develop models of Mobile Game applications that contain character education teaching about soft skill such as: ability in communicating, cooperating, problem solving, creative thinking, collaborating and others. The results of this study are (1) The design of computer based game model by using game format, which aims to provide atmosphere or environment that provides learning facilities to develop students' abilities in the aspect of attitude / soft skill. This is in accordance with the profile of mobile game application which was designed by considering aspects and characteristics of objectives, materials, students and the availability of facilities. (2) The procedure in conducting development of mobile game media in this research is through the stages of: (a) Conducting need analysis of Mobile Game Model, (b) Conducting soft skill competence analysis. This activity describes what soft skill competencies are required by students who will be integrated with mobile games, (c) Product design development, (d) Software development in the form of program development by using programming language and Edge Animed software, (e) Software Testing / Validation which is done in stages, they are limited trials involving end users and expert judgment, (f) Product Dissemination which is conducted through dissemination of research results. (3) Based on the interviews with the end users, who are teachers in general, there is generally a positive response to the use of mobile game media as a medium in developing the students' character and soft skill in elementary school.

1 BACKGROUND

Entering the era of Asean Economic Community (MEA), Indonesia is increasingly being confronted by various challenges. Superior, competitive and characterized human resources is the key to the success of the nation in facing the free market era. MEA is an agreement among countries in Southeast Asia to open free market opportunities within the ASEAN region. MEA stands for Masyarakat Ekonomi Asean or Asean Economic Community. By the opening of a free market, it makes the commodity services and goods can enter easily among countries in Southeast Asia.

The success of a country in the struggle of MEA is determined by the capacity and ability of human resources to compete, collaborate, synergize and achieve a broad market. In general, there are two required capabilities, namely hard skill and soft skill. Hard skill here is a master of science, technology, and technical skills related to the field of science. Meanwhile, soft skill is a person's skill in dealing with other people (interpersonal skills) and skills in managing himself (intrapersonal skills) that are able to develop maximum performance (Dennis E. Coates, 2006).

Heri (2015) explains that there are many theories explaining and describing the criteria of a successful career, almost entirely soft skill elements such as leadership, attitude, team work, synergy, and others that dominate the survey results of answers to the key criteria for success. Many researchers believe that the key to the success of MEA lies in the mastery of the soft skill of human resources. Soft skill is referred to as: foreign language skill, public speaking skill, leadership skill, negotiation skill, networking ability, professionalism, humility and others.

In the science paradigm, soft skill education is seen as the other form of learning outcomes in the form of attitude. Bloom, et al divide the learning domain into three, namely cognitive, affective and psychomotor. Affective domain includes everything

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associated with emotions, such as feeling, value, reward, passion, interest, motivation, and attitude. The five categories of these realms are sorted from the simple to the most complex behaviors. Judging from the characteristics, this realm is crossing with the current and future soft skills which become the main thing needed from the human resources of Indonesia. In the national curriculum, the orientation of attitude building is positioned more dominantly at the elementary level of education.

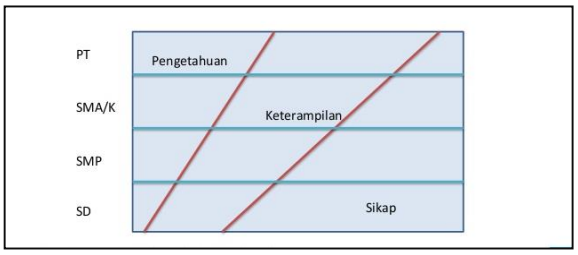

Figure 1: Hard skill Formulation (Knowledge & Skills) and Soft skill (Attitude) in the National Curriculum.

Government through the formula of National Curriculum locating attitude education at elementary level of education. At this stage the attitude educating is more dominant than the knowledge and skills. This is in line with the national vision of the nation's character education. The need for character education, according to Suyanto (2012) should be applied since childhood or commonly called by the psychologists as golden age, because this age is proven to determine the ability of children in developing their potential. The results showed that about 50% of adult intelligence variability has occurred when the children are 4 years old. The next 30% increasing occurs at the age of 8, and the remaining of 20% in the middle or end of the second decade. From here, it is suitable for character education to be started from an early age through various appropriate strategies based on the characteristics of children

Currently we already entered the era of Digital Native, the generation that was born in a time when the development of digital technology took place. The characteristics of this generation are; they are not clumsy and easy to operate a variety of gadgets today even though they are using it for the first time, more media literate, like being in social groups in the virtual world, and like to update information about gadgets and upgrade their own gadget (Festiyed, 2010). Thus, the elementary school children have been accustomed to using digital devices, one of which is game.

One of the current children habits is playing computer-based games (online games and mobile games). According to Komang (2004) the number of game in video players in Indonesia increased 33% every year. This indicates the possibility of an increasing in the number of elementary school students who play game in Indonesia, so it will impact on the students' behavior as an excess of the games.

Research conducted by a well-known University of Oxford shows that online games, in a proportional playing time, will actually produce more positive effects for children. By using nearly 5,000 children, aged from 10-15 years old as research subjects, from those who never play games at all to those who spend hours each day, Oxford University found surprising results. This study concluded that children who play games maximum of 1 hour / day or less turned out to have a happier emotional state and more easily adapt to the environment. Higher social abilities, less life satisfaction, less emotional and friendship issues, and not being hyperactive are some of the positive things found out.

Some experts explain about some of the benefits of online gaming: (1) training problem-solving and logic (Perrone 1996), (2) increasing attention and motivation (Rosas, 2003); (3) training coordination, motor and spatial skills (Beck 2003) 4) teaching children resources and skill management, (5) training in making quick analysis and decisions, (6) training in thinking in depth (Liu 2003), (7) honing teamwork and (8) with Simulations, training to adapt to real-world situations.

However, the phenomenon in Indonesia, online games are generally entertainment, even have a tendency to teach violence. Among the enormous benefits of gaming and becoming a magic for kids especially elementary school, a new breakthrough is required to provide more games with educational content that teach soft skill which is then called education games.

The existence of educational games in Indonesia is still rare. In general, games used by Indonesian children are made by foreigners with characters, content and spirit that comes out of the ideology, culture and spirit of Indonesian culture. The latest data released by the NPD Group titled Mobile Gaming 2015 shows mobile gaming players, those who play on smartphones, iPod touch or tablets play more and they more often played in a longer time than two years ago. Average time spent playing games on a typical day has increased 57 percent to more than two hours per day by 2014 compared to one hour and

20 minutes in 2013 ago. Mostly if a long time is used by Indonesian children to access educational games in which create educational content loaded with soft skill content and character education, of course the impact will be more Indonesian children grow up with better character.

Based on the importance of character education with soft skill-based required the right strategy to internalize the students. On the other hand, the interest of children especially in elementary school to mobile games is very large and will continue to increase, so if it is combined into a masterpiece and has a great value that is educational game containing soft skill educational content. The foundation of the research team is interested in conducting research on "Development of Edge Animated Edge-based Mobile Games Education to improve students' soft skill in Elementary School in West Java".

Referring to the background of the above problems, it can be drawn that the need for the media that facilitate the students especially at the elementary school level that is able to hone and develop the superior characters especially the soft skill field. Digital media especially Mobile Games become one of the alternatives that can be used. In general, the problem in this research is "How to develop Mobile Game Education that can strengthen Soft Skill of Elementary School Students?". Specifically, the problems in this research can be described as follows:

1. How is the design of Mobile Game Education as a medium for the soft skill development of Elementary School Students?
2. How is the Design Development Procedure of Mobile Game Education as a medium for the development of students' Softskill in Elementary School?
3. How is the Design Validity of Mobile Game Education as a medium for the development of students' Softskill in Elementary School?
4. What is the response of Students and Teachers of the design of Mobile Game Education as a medium for the development of students' Softskill in Elementary School?

The general purpose of this research is to produce Mobile Game Education as a medium for the soft skill development of Elementary School Students. This research produces excellent products that will greatly contribute in helping character education through the utilization of digital gadgets that have become the children's daily stuff in Indonesia. To get as much benefit as possible from this product, a massive product implementation strategy is required. The application can use three patterns, namely:

1. Integrated learning. This pattern makes mobile game education products incorporated into the school curriculum. The teacher systematically integrates this product in the learning process as well as in the assignment (resitation).
2. In-Direct. This pattern makes mobile game education not only utilized by school in learning, but disseminated on target through general distribution patterns and become the current trend. The researcher will endeavor in various ways so that this product can be disseminated optimally. Efforts that are made such as: (1) promotion through web / youtube, (2) installation of applications on playstore, I-tune and other media markets, (3) dissemination through social media netwok.
3. Efforts to apply the results of research can also be done by providing seminar/workshop to the targets both local, national and regional, including in the form of scientific publications.

2 METHODS

The method used in this research is Design and Development, referring to Richey and Klein's (2004) 'Design & Development Research' book by D&D Research is "the systematic study of design, development and evaluation processes with the aim of establishing an empirical basis for creation of instructional and non-instructional products and tools and new or enhanced models that govern their development.

Referring to the above definition, there are some major points we can conclude:

1. Design and Development Research is a systematic study (which includes the process of design, development and evaluation). It means that, similar to other studies, this study has certain rules that must be well designed and planned.
2. The goal is to create both instructional and non-learning product and tool. Thus, the output of design and development research can be in the form of products and tools.
3. The resulted products and tools can be either new or improvement from the existing ones.
4. The products / models that are produced have been through a series of validation so as to have the feasibility of aspects of technology and education.

The procedure of research implementation that refers to Hevner et al. (2004) developed through 6 steps, namely: a) identify problems, (b) describe the objectives; c) design and develop products / models

d) model testing, (e) evaluation of test results, (f) communicate the resulting.

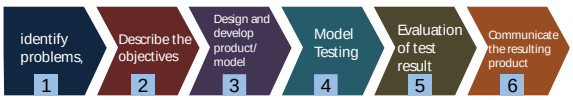

Figure 2: Research Procedure.

From the picture above, it can be integrated into specific procedures in accordance with the context of this research aimed at developing computer-based competency test. Specifically, the steps to be taken are:

a) Identify problems related to basic teaching skill problems Teachers who are the subject of research, to be developed through the utilization of Digital Media (Video)
b) Setting the program objectives, namely the final achievement to be obtained in connection Digital Media development to improve the ability of teachers related pedagogic competence
c) Create a design (Storyboard / Script) and develop a drum Model in the form of Digital Media (Video);
d) Test / Test Model Try the system
e) Evaluation of the Digital Media test that has been previously created in step 4 above and revise the existing entries.
f) Socializing Digital Media Models to a wider range of things and to end users (End Users)

Subjects in this study are teachers who will follow the Video product and will be a tester of the product made samples to be determined then with purposive sampling. The research location in Bandung, the school laboratory research UPI. Instrument used, such as (1) The study documentation, (2) Study of Literature, (3) Interviews (4) Observation.

3 RESULTS

3.1 The Design of Mobile Game Education as a Medium for the Development of Soft Skill Elementary School Students

Design of computer-based Games Model using game format, which aims to provide an atmosphere or environment that provides learning facilities to enhance students' abilities. For learning games better known as Instructional Games has a Basic Component as a generator of motivation by raising a way to compete to achieve the expected learning objectives.

Nowadays more games are used as a means of playing for children, games on the market are not enough to have the educational content, but the interest of children to play games is very high. Instructional games attempt to present a game that remains attractive for students but also has a high learning element. Instructional Games is quite developed in developed countries, for example: Decimal dart, How the west was on, Ordeal of Hang Man, Rocky Boot, Archaeology search. From the examples of instructional games, the characteristic of the games model is illustrated.

This game model has several principles that are different from other models such as Drill, Tutorial and Simulation. There are several principles of this Design Model Games:

a) Purpose Clarity. The model games have a clear purpose from the early students playing. Objectives have been explicitly stated so that students know the purpose of the game. Goals are not solely for entertainment, but the learning objectives drawn from the curriculum are used. Indicators of goal achievement can be seen from the success of students to pass all the challenges in the game is also from the score obtained.
b) There are rules. namely the determination of every action that can be done and which cannot be done by the player. The rules may change as long as it is to avoid the weaknesses that occur with those rules and to make the game more interesting.
c) The existence of the Competition, the program must provide facilities where students compete with other parties to be the best, such as attacking the opponent, against yourself, against the opportunity or time set. Students will be happy if it has been a winner, and that's what makes the model games become interesting for students.
d) A Challenge. Games provide several levels of play from the easy medium to the difficult level of a challenge for students.

Here's the design of the resulting game model:

Figure 3: Game Design.

3.2 Procedure of Design Development of Mobile Game Education as the Media of Development Students' Soft Skill in Elementary School.

The activities to be undertaken in this research can generally be described as follows:

a) Conducting Need Analysis of Mobile Game Education Model. At this stage some principles analyse are concerned with: (1) Analysis of government policies related to character education and the use of IT in the community, (2) Situation analysis, (3) Analysis of end users in this case are elementary, and (4) Analysis of social condition of society.
b) This activity describes about what soft skill competencies are needed by students who will be integrated with mobile games. Also supported from the perspective of learning 21st century (21st Century Learning). Developing the competence indicators of Soft skill.
c) Product Design Development. At this stage some activities are done, namely: GBPM Development, SKPL Making, Storyboard Making and Mobile Architecture Making.
d) Software Development. Activities in this phase is in the form of program development using program language and Edge Animed software, in addition to the production of animated games using 3D animation software. And then Sound Recording and the last is Testing.
e) Software Testing / Validation. Applications that have been made further in the trial before used in a broad scale. The trial is done in stages, i.e. limited trials involving end users and expert judgment.
f) Product Dissemination. After the product is considered final, then the researcher's job is doing dissemination of research result. Dissemination is done in the form of: national seminars, Worksop and promotion through web application (Web Promotion).
g) Scientific Publication. Publication is an obligation for the researcher, as a consequence of the result of the research. Publications planned in this research include: the creation of national journals and publications in the form of International Journals.

The activity of this model is generally described in the figure 4:

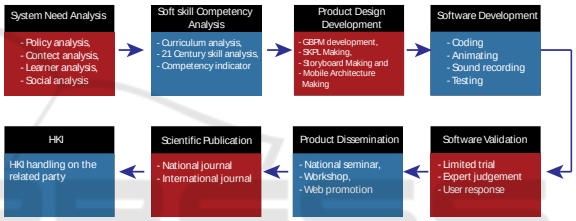

Figure 4: Research Flowchart.

The results of this research that resulted in "Edge Animed Edge-based Mobile Game Education" contain novelty elements, with the consideration that the games circulating in the community are generally just for entertainment not for education. Thus, the release of the game in education into a new breakthrough. In addition, the current software technology has led to an application that is Edge Animed that not many people know, although the power is able to make mobile games very sophisticated.

3.3 Teacher's Response to Mobile Game Education Design as a Medium for the Development of Students' Soft Skill in Elementary School

The results of interviews with elementary school teachers in the area of Bandung City can be analysed as follows: (1) This media has the usefulness as Media Game Budi Pekerti in developing Character Education at Basic Education Level, it is recognized

by all respondents, (2) Media is interesting or students (3) It is easy to use by the target users of Primary Education level students, (4) This media has a visual display quality (Interfacing), visual clarity and quality of image, (5) This media has sound quality (Music & Sound Effect), clearly heard by the user, and right in the selection of his voice, (6) There are facilities (Tool Navigation) that can be used well, there is no operation problem, (7) on the asset of interactivity (program response to user activity), (8) There is a conformity of this Game with the Character Education Content (9) There is an authenticity aspect of the program (Originality) and (10 Substance games have conformity with the education and not deviate from the rules and elements of SARA.

4 DISCUSSION

The Games Model is a computer-based learning model using game formats, which aims to provide an atmosphere or environment that provides learning facilities to enhance students' abilities. For learning games, it is better known as Instructional Games has a Basic Component as a generator of motivation by raising a way to compete to achieve the expected learning objectives.

Nowadays more games are used as a means of playing for children, games on the market are not enough to have the educational content, but the interest of children to play games is very high. Instructional games attempt to present a game that remains attractive for students but also has a high learning element. Instructional Games is quite developed in developed countries, for example: Decimal dart, How the west was on, Ordeal of Hang Man, Rocky Boot, Archaeology search and others. From the examples of instructional games, the characteristic of the games model is illustrated.

Soft skills can be interpreted as a person's performance in interpersonal skills and intra-personal skills that can maximize one's performance. Here are some examples that included in the skill set up its own are: (a) transforming character, (b) transforming beliefs, (c) change management, (d) stress management, (e) time management, (f) creative thinking processes, (h) goal setting and life purpose, (i) accelerated learning techniques, etc. Examples of skills in dealing with others include: (a) communication skill, (b) relationship building, (c) motivation skills, (d) leadership skills, (e) self-marketing skills, (f) negotiation skills, (g) presentation skills, (h) public speaking skills.

According to Bloom, et al. Learning outcomes are grouped into three: cognitive, motoric, and affective. Affective is associated with "feelings, emotions, value systems, and attitude." This affective goal can be detailed from a simple "pay attention to a phenomenon" to a complex that is an internal factor of a person like personality and conscience. Affective taxonomy was developed by Krathwohhl, et al. They develop affective taxonomies in five levels ranging from (a) recognition, (b) response, (c) respect for value, (d) organizing and up to (e) practice.

At the highest level the attributive (characterization) of attributes (i.e. value of honesty, discipline, etc.) has become an inseparable part of a person, or has become his character. At a high rate of change such as respect for value (valuing), organizing and characterization of behaviors that are indicators of achievable goals are overlapped, and cannot be separated expressly. This suggests that although conceptually these levels can be separated, the formulation of objectives cannot be clearly distinguished. It is precisely this that makes affective goals difficult to evaluate whether or not to achieve.

Personal development is broader than the system of values, morals, ethics, motivation and social competence (all of which are attributes of affective competence). Even expressed personal development (self-development) is the culmination of affective competence. The attributes of affective competence according to Martin and Briggs include: values, morals and ethics, attitudes, social competence, motivation, interests, and emotions and feelings. Many lecturers have recognized the affective domain learning objectives (most of them are obtained through.

5 CONCLUSION

This research can be summarized as follows: (1) Design of computer-based Games Model using game format, which aims to provide atmosphere or environment that provides learning facility to develop student's ability in attitude / soft skill aspect, is in accordance with the profile of mobile game application which is designed by considering aspects and characteristics of objectives, materials, students and the availability of facilities. (2) Procedures in performing mobile media development in this research through stages: (a) Conducting Need Analysis of Mobile Game Model, (b) Conducting Soft Skill Competence analysis. This activity describes what soft skill competencies are needed by the students who will be integrated with mobile games, (c) Product Design Development, (d) Software Development, such as programming language and Edge Animed software, (e) Software Testing / Validation done in stages, i.e. limited trials involving end users and expert judgment, (f) Product

Dissemination conducted through dissemination of research results. (3) From the interviews with teachers as the end users, there is generally a positive response to the use of mobile game media as a medium in developing the students' character and soft skill in elementary school.

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