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## LEARNING INNOVATION BY APPLYING INTERACTIVE GAME-BASED MULTIMEDIA: TEACHERS' PERCEPTIONS

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### Abstract

This study aims to describe: (1) the acceptance of teachers to interactive game-based multimedia as a medium of learning; (2) teachers' understanding of game-based interactive multimedia; and (3) teachers' assessment of interactive game-based multimedia. The research method used is descriptive qualitative. The data were collected by using observations and interviews. Data analysis techniques used are interactive analysis consisting of data collection, data reduction, data presentation, and conclusion. The results of this study indicate that (1) teachers provide good acceptance of interactive game-based multimedia because the learning process becomes more active and student-centered; (2) interactive game-based multimedia is simple, so it's easy to use to help students learn; and (3) teachers have a good assessment on interactive game-based multimedia, so it can be used as learning media either at school or at home.

**Keywords:** interactive multimedia, games, teachers' perception, elementary schools.

### INTRODUCTION

The world of education has many problems. One of the problems that exist in the field of education is the low ability of students in understanding materials. It may impact on the low students' learning outcomes. Low students' learning outcomes indicate that the learning process has not been implemented maximally so that the learning objectives have not been achieved.

The problems that exist in education can be caused by various factors. These factors include teachers, students, infrastructure, and education observers. Ideally, all of these factors must be optimized in order to achieve the purposes of learning.

One of the factors that provide an important role in supporting the learning process is the learning media. Teachers need to use instructional media in accordance with the characteristics of students and in accordance with the development of the era. Thus, it can increase students' learning interest so that student learning outcomes increase as well.

Learning media as one of the factors that play an important role in learning is considered important to be developed. Arsyad (2014: 81) mentions that one of learning media characteristics is that media contain and carry messages or information to the recipient, students. Messages and information brought by the media can be simple messages and can also be complex messages. However, the most

important thing is that media are prepared to meet the learning needs and students' skills, so students can actively participate in the learning process.

Through learning media, teachers will more easily develop the students' potential, because students will be directly involved in the learning process. This is in line with Baharuddin & Wahyuni (2015) that in the learning process, students must be actively involved and students become the center of learning process in the classroom.

Based on observations through the pre-survey teachers and students, students are less enthusiastic about thematic learning media. In addition, there are some students who do not pay attention when the teacher delivers materials using learning media. Students are less actively involved in the learning process. So that researchers try to develop interactive learning multimedia.

Ariani & Haryanto (2010: 25) suggests that multimedia is a medium that combines two elements or more consisting of graphic texts, images, photos, audios, videos, and animations in an integrated manner. Interactive multimedia is used individually so as to provide the same experience to students in the learning process. In addition, interactive multimedia provides an opportunity for students to be actively involved.

Interactive multimedia is suitable for use in primary schools because primary school students are more interested in learning media that not

only presents texts, but also images, videos, and animations. In addition, primary school students are still at a concrete stage of thinking, so they need visualization to understand the materials.

Primary school students prefer to play games rather than reading books. This is in accordance with the results of research conducted by Victoria et al (2010) that some children aged 8-18 years prefer to spend time to play video games rather than reading books. Therefore, the researcher integrated games in interactive multimedia to fit the characteristics of elementary school students.

Many research results show that interactive multimedia has advantages if used as a medium of learning. Sugiyono (2014) has developed interactive multimedia-based teaching materials and the results are effective as a self-taught learning. Wahab, et al. (2015) has also developed multimedia applications that can help adolescents improve their knowledge and awareness against cyber-bullying. The results of research conducted by Purnamasari & Herman (2017) indicate that there are differences in the improvement of mathematical understanding and mathematical communication between students who gain learning using interactive multimedia with students who obtain conventional learning.

Based on the results of the research above, the interactive multimedia has many benefits to support the learning process in schools. Interactive multimedia allows students to more easily understand the materials given. Interactive multimedia also makes students learn by involving their senses with optimal.

The researcher is trying to find out teachers' perception of interactive game-based multimedia. Perception is a view of everyone (Piaget, 2010). This is in accordance with the opinion of Baharruddin & Wahyuni (2015) stating that perception is a process of a person in giving meaning to information or stimulus received based on the reality of the object being captured. Each teacher has different perceptions of instructional media. So the teacher's perspective will be different between one and another in using learning media.

Teachers must have a proper perception of learning media in accordance with the characteristics and objectives of learning so that learning objectives can be achieved well. In the process of learning, in order teachers can develop the potential of children, learning media that will facilitate teachers in delivering the subject matter are necessary.

This study aims to determine the perceptions of teachers to interactive game-based multimedia. It is expected that the results of this study can be used as a reference for practitioners to implement learning

media in accordance with the characteristics of elementary school students. Thus it can help teachers to achieve learning objectives.

## **RESEARCH METHOD**

This research used a descriptive qualitative research type. The research was conducted in August-November 2017. The research was conducted in four elementary schools in Surakarta, namely Warga Elementary School, Al-Azhar Syifa Budi, Muhammadiyah 1 Surakarta Elementary School, and Al-Abidin Elementary School. Research subjects were four elementary school teachers in Surakarta. Preliminary data for this study were taken from the observation. The data in this preliminary study is tangible information that contains school conditions, learning media, student learning outcomes, teachers' conditions, and school facilities.

Data collection techniques in this study used observations and interviews techniques. The instruments used in this research are observation sheets and interview guide. The collected data were analyzed using interactive analysis proposed by Miles & Hubberman (2009) consisting of data collection, data reduction, data presentation, and conclusion.

## **RESULT AND DISCUSSION**

### **Result**

#### **1. Teachers' Acceptance of Interactive Game-Based Multimedia**

Based on the observations, teachers accept interactive game-based multimedia to support the learning process. Teachers introduce students to the interactive game-based multimedia using LCD projectors. Teachers also provide guidance to students when students use their own learning media. Learning using interactive multimedia makes learning become student-centered. The teacher's role in the learning is only as a facilitator, so he or she only monitors students during the learning process. After using interactive game-based multimedia, the teacher asks students questions about the material they have learned. Teachers also confirm the material that is not clearly understood by students.

Based on the results of interviews, teachers accept interactive game-based multimedia as a medium of learning. This is in accordance with the opinion expressed by the informant 1 that says, "It is interesting to use computers as learning media particularly to increase students' attention, so they are not quickly bored but entertained". The informant 3 also states, "I as a teacher just love to use the learning media, moreover students use them, they would be happier because there is a game". Informant 5

points out, "The learning media featuring the videos are perfect for students nowadays because they are already affected by technology in their daily lives".

## 2. Teachers' Understanding of Interactive Multimedia Based Game

Based on the results of interviews with teachers, most teachers understand the interactive game-based multimedia. They understand the use of interactive game-based multimedia because there are clear manuals. In addition, there are already manuals included in lesson plans. The informant 2 suggests, "Interactive multimedia is easy to use because of its simple navigation buttons. Students can definitely use the media". Furthermore, the informant 3 suggests, "Multimedia is interactive in not only simple to use, but also it is equipped with pictures and videos, so it facilitates students in the learning process". In addition, the informant 5 also states, "Learning media is equipped with manuals so it can be used easily".

Based on observations during the lessons, the teachers introduce interactive game-based multimedia well. Teachers have no difficulty in explaining how to use them by displaying the main page, explaining basic competencies, learning objectives, indicators and manuals. Teachers also give examples to students how to use them well.

## 3. Teacher Assessment of Interactive Game-Based Multimedia

Based on the results of interviews, teachers provide assessments of interactive game-based multimedia well. The informant 1 says, "Interactive game-based multimedia can be used as a companion learning medium for students". The informant 3 also says, "Interactive multimedia can be used as variations in learning to be more varied". In addition, the informant 4 explains, "Interactive learning media makes students learn more easily because there are images and videos." The informant 5 argues, "Interactive multimedia can be used as independent learning media because the teacher is only a facilitator, so students are more active".

Overall interactive game-based multimedia is good. However, there are some suggestions given by teachers to the interactive game-based multimedia that it has no exit button to return to the main page on the evaluation section. It also still has small fonts, so it needs to be fixed. In addition, the compact disk cover needs to be improved to make it brighter, and it needs a description on the back cover of the compact disk.

## Discussions

Most teachers have good acceptance of interactive game-based multimedia. Interactive multimedia is suitable for use in elementary schools because the learning process becomes more fun. This is in accordance with the opinion expressed by Heafner (2004) saying that students enjoy learning using technology because they see technology as interesting and entertaining thing. In addition, there are research results showing that the integration and implementation of computer games into the classroom can help students learn more fun and effective (Ahmad & Jafaar, 2012).

Teachers can use interactive game-based multimedia well. Teachers are accustomed to using computer devices so that they have no difficulty in using advanced technology-based media. Teachers introduce interactive game-based multimedia to students and assist them who face difficulty in using the interactive game-based multimedia.

The interface in the interactive game-based multimedia is simple and easy to use. In addition, there are clear instructions, so teachers and students can use it easily. There are several suggestions that the researcher need to improve in order to have better interactive game-based multimedia that can be used in public.

Most teachers give good assessments. This is because the interactive multimedia is equipped with pictures and videos, so it provides convenience for students in understanding the materials. This is in accordance with the results of research conducted by Ebata (2008) that students prefer visual aids to get new information and memorize it, so they more easily understand the materials. Students using interactive game-based multimedia become more active and learn independently. Interactive multimedia can be used as a companion learning media either at school or at home.

## CONCLUSION AND SUGGESTION

Based on the results of interviews and observations on teachers' perceptions of the interactive game-based multimedia, it can be concluded that (1) teachers have good acceptance of the interactive game-based multimedia as a medium of learning; (2) teachers have a good understanding of the interactive game-based multimedia because it is simple and easy to use; and (3) the teachers provides assessments that the interactive game-based multimedia deserves to be used as a companion learning medium and as a variation of learning.

There are suggestions given to the teacher to vary the learning process by using learning media in accordance with the characteristics of students and

the development of the era. Principals should provide facilities to teachers to increase knowledge about learning media by attending training or seminars.

## REFERENCES

- Ahmad, Ibrahim & Azizah Jaafar. (2012). "Computer games: implementation into teaching and learning". *Journal Social and Behavioral Sciences*, vol. 59, 515 – 519.
- Ariani, Niken & Dany Haryanto. (2010) Pembelajaran Multimedia di Sekolah. Jakarta: Prestasi Pustakaraya.
- Arsyad, Azhar. (2014). *Media Pembelajaran*. Jakarta: Raja Grafindo Persada.
- Baharuddin., Wahyuni N, E. (2015). *Teori Belajar dan Pembelajaran*. Yogyakarta: Ar-Ruzz Media.
- Ebata, M. (2008). "Motivation Factors in Language Learning". *The Internet TESL Journal*, 14(4). diakses dari <http://iteslj.org/Articles/Ebata-MotivationFactors.html>.
- Heafner, T. (2004). "Using technology to motivate students to learn social studies". *Contemporary Issues in Technology and Teacher*, vol. 4(1), 42–53.
- Miles, Matthew B. & A. Michael Hubberman. (2009). *Analisis Data Kualitatif*. Jakarta: UI-Press.
- Piaget, J. (2010). *Psikologi Anak*. Yogyakarta: Pustaka Pelajar.
- Purnamasari, Setyarini & Tatang Herman. (2016). Penggunaan Multimedia Interaktif terhadap Peningkatan Kemampuan Pemahaman dan Komunikasi Matematis, Serta Kemandirian Belajar Siswa Sekolah Dasar. *Jurnal Pendidikan Dasar*, vol. 8 (2), 178-185.
- Sugiyono, Eko Imam. (2014). "Pengembangan Bahan Ajar Menyenak Berbasis Multimedia Interaktif Dalam Model Belajar Mandiri Untuk Sekolah Menengah Pertama". *Jurnal Pendidikan Bahasa dan Sastra Indonesia*, vol. 3 (2), 83-89.
- Wahab, Nadia A., Wan Ahmad J.W.A & Balakrishnan M. (2015). "The use of multimedia in increasing perceived knowledge and awareness of cyberbullying among adolescents: A pilot study". *Journal Social and Behavioral Sciences*, vol. 176, 745-749.