



E-Learning Based On ‘Joomla!’ To Improve the Learning Results of Social Studies Content in Primary School

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The Social Studies learning outcomes in primary school are not optimal. This research aims to develop e-learning based on the Joomla! platform to increase the learning result of Social Studies completed in the fifth grade. The research and development (R&D) undertaken used the ADDIE development model. The research subjects were 38 students in the fifth grade of a public elementary school. The data collection methods used were observation, questionnaire, interview, documentation, and test. The data analysis techniques used were preliminary data analysis, t-test, n-gain test, and the average improvement of the skill. The research results showed that e-learning, based on Joomla! media, was feasible for use. E-learning based on Joomla! media was effective towards the learning outcomes with the average differences using the t-test being 14.353, and the n-gain being 0.59, in the medium criteria. The conclusion of this study is e-learning based on Joomla! media is effective towards improving the Social Studies learning outcomes of students in the fifth grade.

Keywords: *e-learning, Joomla!, social study learning outcomes*



INTRODUCTION

IPS (Social Studies) is one of the names for a subject that is delivered in primary and secondary education (Sapriya, 2017; Puspitasari, 2012). The objective of IPS is to improve the knowledge, attitude and awareness upon responsibility as the society, and to pursue education established dynamically by introducing the students to the awareness of their surroundings. Both Nurcahyanti, and Turner (2014; 2017) mentioned that education, principally, is doing something to change the attitude of an individual and thus, the teaching requires various activity that can support the changes in attitude. Hence, the teaching of IPS in primary school must be done in accordance to the age and characteristics of the students, so that it is accurate (Susanti, 2017; Afandi, 2011).

The role and objective of the content of IPS in the curriculum of 2013 has already been formulated according to the development of education generally in Indonesia. However, in reality, there are still plenty of problems in the primary school (Permatasari et al, 2014; Subandi, 2014). Based on the results of the early research that was completed by the researcher in the public primary school, it is known that there are several problems, including: the low average score or learning result of IPS content and even below the minimum score; students do not really like lessons in IPS; the teaching of IPS is viewed as hard by the students; teachers are still using the media of pictures and text, resulting in the students feeling unmotivated in following the teaching; and there is not enough teaching of IT based media available, which is suitable with the needs of the students (Afandi, 2013). The effective integration of technology is the result of many factors, but the most important factor is the teachers' competence and ability to shape instructional technology activities to meet students' needs (Gorder, 2008). Open learning is essentially a goal, or an educational policy. The main characteristic of open learning is the break of barriers to learning. In other words, no prior qualifications are required to study, and for students with disabilities, a determined effort to provide education in a suitable form that overcomes the disability (for example, audio tapes for students who are visually impaired). Ideally, no one should be denied access to an open learning programme. Thus, open learning must be scalable as well as flexible. Openness has particular implications for the use of technology. If no one is to be denied access, then technologies that are available to everyone need to be used (Bates, 2005). E-learning tools and technologies can evolve a large number of people in learning. Moreover, it makes classes interactive and saves time and effort for learning.

The initial research completed by the researcher in the public primary school identified that there are problems in the learning results of the students. In the research, it was found that



the average score of the lowest class is in the class of VC and is in the content of IPS. The learning result here has a low average score of 62.5. That is linear with the data gained that from 37 students, there were 20 students (54 per cent) who gained a result below the minimum score of 63, while the rest, 17 of them (46 per cent), gained a result above the minimum score.

One of the ways to solve this problem can be achieved through the optimisation of the media used. The teaching media has a strong influence upon the quality of education. The teaching media has a positive influence upon the quality of teaching with a coefficient score of 0.674 (Sunaengsih, 2016; Utami, 2016). Of specific interest, is the effect of media characteristics on the structure, formation, and modification of mental models. Implications for research and practice are discussed (Kozma, 1991). Batsila, and Ahmad et al. (2014; 2012) both mentioned that computer based teaching media can improve the learning motivation of students. Meanwhile, teaching with media it is essential to note potential problems, such as the following: fear of change, training in basics, personal use, teaching models, learning based, climate, motivation, and support (Bitner & Bitner, 2002). Considering such problems, the researcher wants to develop the learning results of IPS content for the fifth grade. One application for the use of computers or digital devices is learning through e-learning. E-learning can provide a learning environment without the boundaries that are limited by time and location (Bokhari et al., 2011; Rosenberg et al., 2002). Bhirud, and Bahr et al. (2015; 2010) both explained that Joomla! is a management system for open and free source content (CMS) to be published on the World Wide Web and the intranet. As an open source CMS, it has its own advantages but out of so many, only a few like Joomla!, Drupal, and WordPress are popular in the market because of their good functionality and support (Holzner et al., 2009; Patel et al., 2011). The integration obtains advantages from both systems. Moodle controls student admission, course organisation, grades, etc., but on the other hand, Joomla! allows the inclusion of news and diverse didactic materials in a structured and unified way (Merino et al., 2011; Rahmel, 2013).

The previous research indicated that Joomla! deserves to be used in the process of teaching. Bakri (2017) described that the e-learning media that is developed using the CMS Joomla! deserves to be used as the teaching model for Physics in the senior high school setting. Meanwhile, Uno (2016) mentioned that the website-based teaching media that is developed using the model of ADDIE is effective enough to be used as the teaching media for IPS. Joomla! is also very user friendly. Joomla! also provides such an environment that novice users can also handle its functions (Patel et al., 2011). An advantage of Joomla! over other CMS's, is its full integration with Moodle (Merino et al., 2011). Therefore, hopefully Joomla!

can increase learning interest in social science subjects. For this, the purpose of a flexible multidimensional data model and the generation of individual content are the solution. It is necessary to enable the interaction between the learners and the content in e-Learning systems in the same manner (Tavangarian, et al., 2004).

METHOD

The research type used is research and development (R&D). The development model chosen for this research is the ADDIE model developed by Reiser and Mollenda in the nineteen-nineties in designing the teaching system (Branch, 2009). The ADDIE Model is an effective, systematic model that can be adapted for use by instructional coaches to design, implement and evaluate the effectiveness of critical work functions. By encouraging individual or organisation-wide use of this model, all stakeholders can be better informed about the impact of the instructional coaching position on teacher capability, and by extension, student results (Davis, 2013). The steps for the ADDIE model are analyse, design, development, implementation, and evaluation (Tegeh, 2014; Danks, 2011; Williams, 2010). The research procedure here is a needs analysis, design, development, implementation, and evaluation. The needs analysis is used to gain the information related to the media that will be developed, so that later the media will be adjusted with the needs of the teacher and students (Aldoobie, 2015; Drljača et al, 2010).

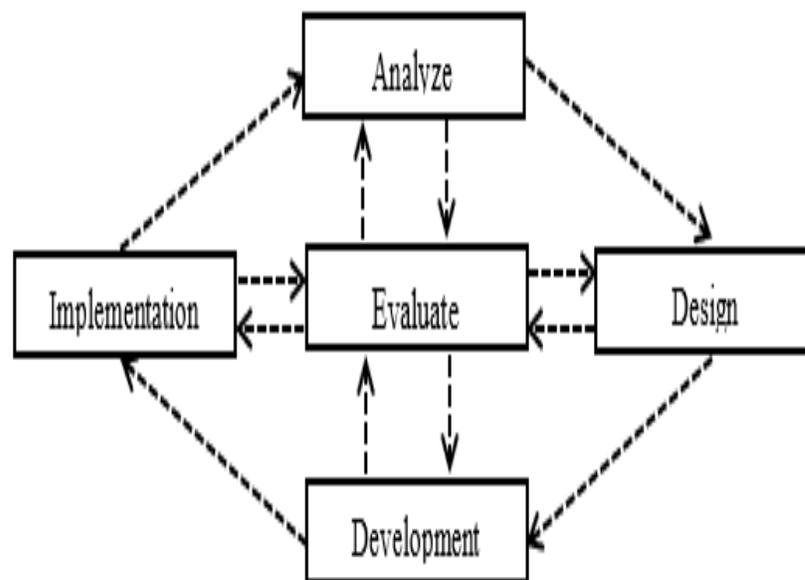


Fig. 1. Development Model of ADDIE

The subjects of the research are the students of VC of a public primary school, consisting of 38 students. A small group of five students was used to explore research on the use of e-learning through Joomla! based teaching media. The remainder of 33 students participated in large group testing. In this research, the independent variable is the Joomla! based e-learning media, meanwhile the dependent variable is the learning result of the IPS content. The technique of data collecting included the use of observation, document data, questionnaires, interviews, and testing. Data collection was completed via a variety of approaches so that the data collected is data that represents the actual data. The data analysis technique used the early data analysis, hypothesis testing, n-gain testing, and the improvement of average skills.

RESULTS AND DISCUSSIONS

The content of e-Learning Media Development based on JOOMLA!

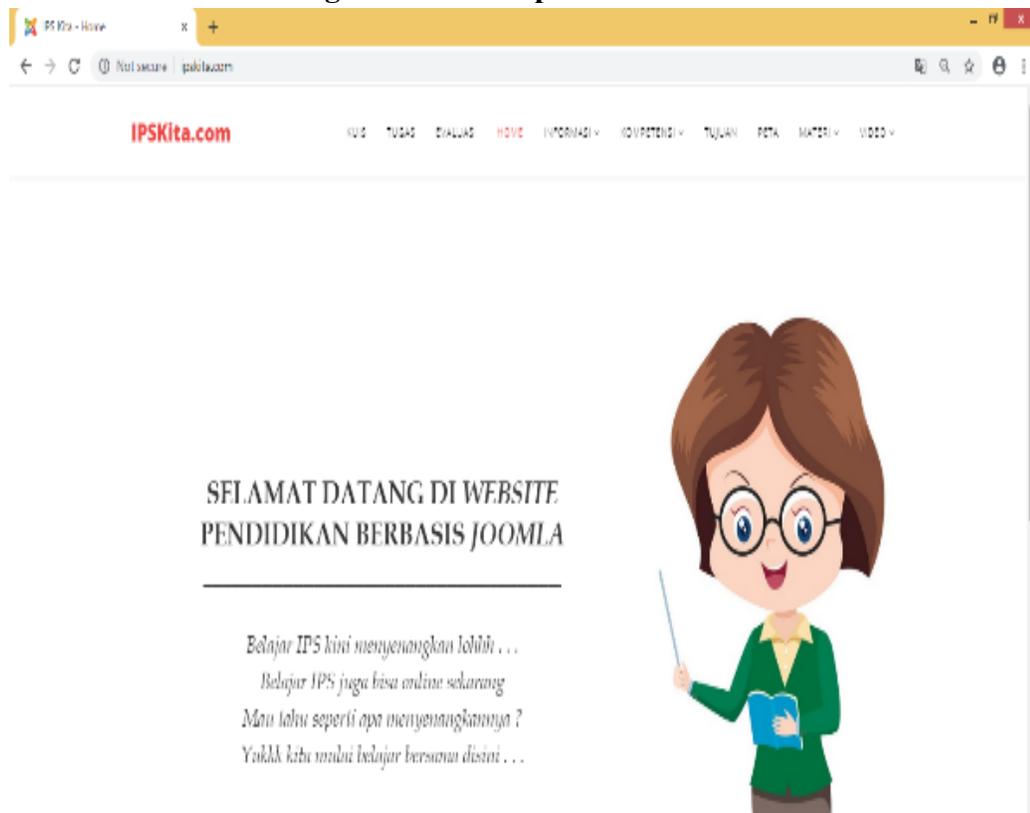


Fig. 2. Display of main page

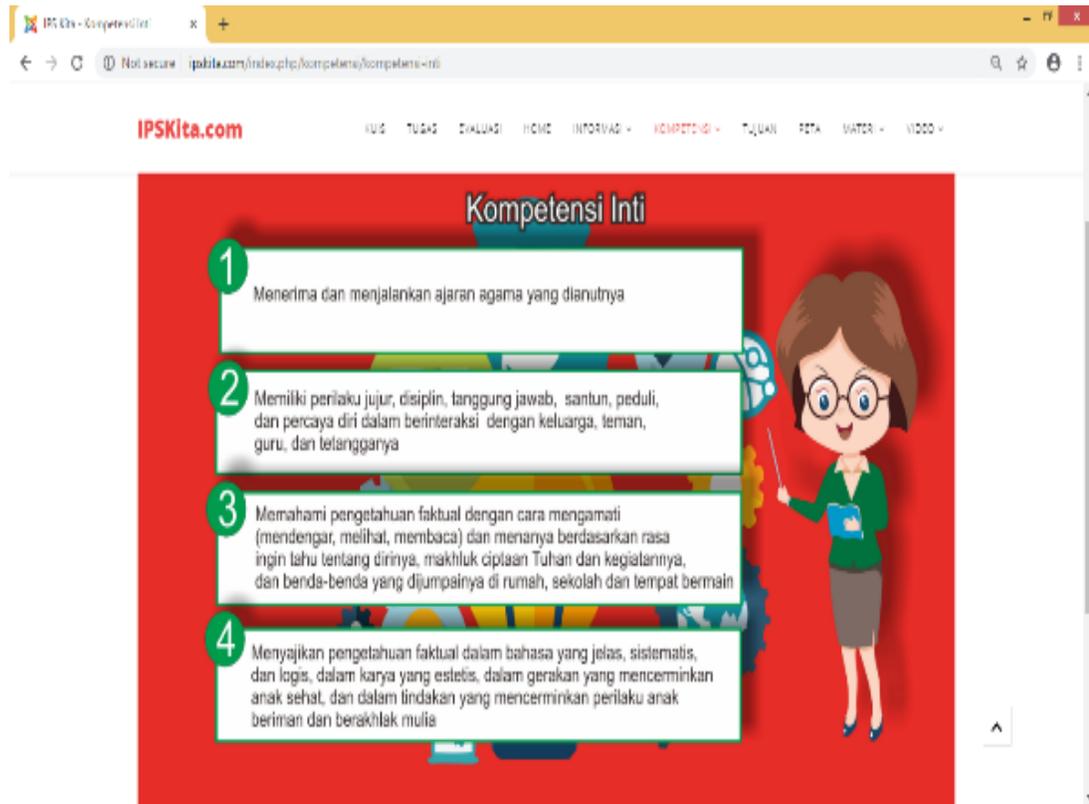


Fig. 3. Display of core competence



Fig. 4. Display of basic competence

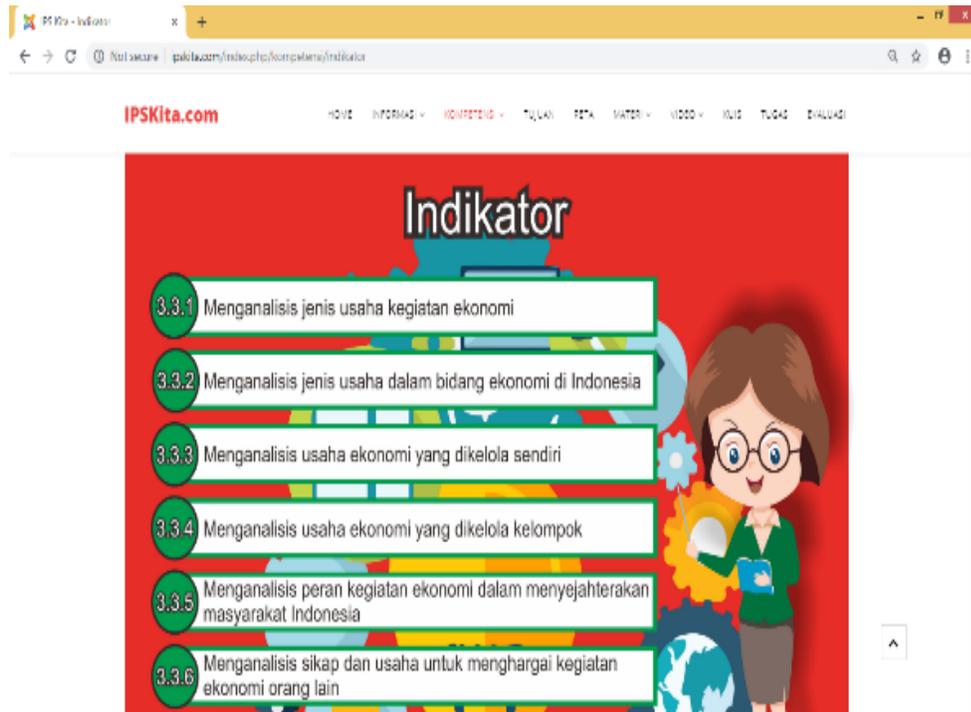


Fig. 5. Display of indicators of teaching

Result of the Feasibility Analysis on the Content of Material and the Presentation of e-learning based on JOOMLA! Teaching Media by the Experts

The Joomla! based e-learning teaching media underwent an evaluation process of a feasibility analysis and validation from the experts of content and the experts of media. The result of the scoring for the Joomla! based e-learning teaching media, for both content and media validators, is presented in Table 1.

Table 1. The Score of the Feasibility Analysis on the Content and Media for the Joomla! Based e-learning Teaching Media

Scorers	Component s	Tota l Score	Percentag e	Criteria
Validato r	Content Material	78	87%	Very Feasible
	Media Presentation	65	81%	Feasibl e

In Table 1, it indicates that the experts of the content materials rated the content in the criteria of ‘very feasible’ with a score of 78 and a percentage of 87 per cent. The scoring aspect of the materials in this teaching media is in the aspects of content, language and writing, as well as the aspect of evaluation tools. Meanwhile, the media expert scored this teaching media in the classification of ‘feasible’ with the score of 65 and the percentage of 81 per cent. The scoring aspect of the Joomla! e-learning based teaching media is in the aspect of the look of the media, practicality, attractiveness of media, and the interactivity.

The Effectiveness of the Joomla! Based e-learning Teaching Media upon the Learning Results for the IPS Content

The influence of the Joomla! based e-learning teaching media is observed from the cognitive learning result through a formative test in the form of a pre-test and post-test or testing before and after using the media. The researcher completed an effectiveness test on the Joomla! based e-learning teaching media through a large group testing. The activity undertaken by the students in the large group testing was the same as the small group testing. The following, Table 2, shows the differences of learning results for the IPS content, before and after the use of Joomla! based e-learning teaching media in the large group testing.

Table 2. Learning Results for IPS content in the Large Group Testing

Note	Large Group Testing	
	<i>Pre-test</i>	<i>Post-test</i>
Number of Students	33	33
Average Score	60.2	83.8
Lowest Score	30	60
Highest Score	85	100
Number of Passed Students	15	32
Number of Failed Students	18	1
Margin of Average		23.6
Percentage of Passed Students	45.5%	97%
Improvement Percentage		51.5%

The Joomla! based e-learning teaching media is effective in improving the learning results, proven by the average margin from the t test with a score of 14.353, and an n-gain score of 0.59, with the criteria scoring of medium. The response of the large group testing gained a percentage of 90 per cent, and the response of the teachers was a score of 97 per cent. The results of the responses from the teachers and students indicated that the Joomla! based e-learning teaching media that was developed by the researcher received a very good response.

The use of media in learning is a must in the current digital era; children of primary school age are members of the alpha generation who were born familiar with technology. Learning goals that are independent and fun are the true goals of the learning process, enabling students to complete the learning process independently. We are living in an age often portrayed as being dominated by consumer capitalism and the products of a capitalistic mass culture. For example, shopping malls, tabloid newspapers, talk shows, Music Television (MTV), and the World Wide Web. Users are of all ages and backgrounds, but because many are children and youth, it creates criticism for mindlessly buying into these cultural artifacts. The popular consumption of cultural phenomena such as computer games, MTV, chat rooms on the Internet, video arcades, comics, Madonna, and the television shows South Park and Ally McBeal, produce texts of a sort, which in turn evoke different responses from different people. For example, popular culture theorist John Fiske (1989a) has pointed out that for some audiences, Madonna is read as nothing more than a ‘tom boy’ while for others, she personifies a resistance to patriarchy's definition of what a woman should be, do, and say (Alvermann et al., 2018). This is an indisputable factor for continuing to spur the learning process to adapt to the times.



It occurs because the use of e-learning based media is more friendly and preferred by students, thus the use of Joomla! received positive results (Abdulwahedet al 2013; Foroughi, 2011). The effectiveness of the results is supported by the features provided by Joomla! that enable the existence of supporting the management of the learning content, learning methods, learning resources, e-learning files, video-on-demand and other aspects, and presenting a line of thought for open curriculum construction so that learning can more easily be accepted by students and be more enjoyable (Graf, 2006; Qi & Tian, 2011).

CONCLUSION

Based on the development of the Joomla! based e-learning teaching media in improving the learning results of IPS content, it is indicated that the Joomla! based e-learning teaching media is feasible for use. The Joomla! based e-learning teaching media is effective upon the learning results, with the presence of a margin of average through the t test with a score of 14.353, and an n-gain score of 0.59, with the scoring criteria of medium. The conclusion of this research is that the Joomla! based e-learning teaching media is effective upon the learning results of the IPS content for the fifth grade.



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