

## Value-Based Interactive Multimedia Development through Integrated Practice for the Formation of Students' Character

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### ABSTRACT

This study aims to describe the development of value-based interactive multimedia through integrated practice for the formation of students' character. This study uses Research and Development Design at the Department of Social Sciences Education at Indonesia University of Education. Conceptually, the design in question is integration of living values and social studies learning materials into interactive multimedia by involving students through an integrated practice in schools (university and junior high school). Implementation of the design is realized through several steps: negotiation of subject matter and character, presentation of materials, group distribution based on social science topics, exploration of character values according to the topics, integrated practice (initial observation to school, multimedia scenario development, multimedia production, multimedia simulations in class, and multimedia utilization in school). Implementation of the interactive multimedia design significantly affects the formation of students' character.

**Keywords:** interactive multimedia, value, integrated practice, character, student

### INTRODUCTION

Higher Education as an educational institution responsible for shaping younger generation for future leaders holds a very strategic role in the formation of local wisdom-based character. According to Komalasari and Sapriya (2016) and Saripudin and Komalasari (2015) on the implementation of character education models in colleges and schools, it is necessary to cultivate methods of character education that meet the following characteristics: value-based education; college culture-based character education; and character education which involves aspects of "knowing the good, desiring the good/loving the good and acting the good" (Lickona, 1991).

The above characteristics must be integrated into learning activities as core activities in college. This is in accordance with the format of character education developed by the Ministry of National Education (2010: 43), namely integration of character values in classroom learning activities in all subjects, which encompasses entire learning components, namely materials, methods, media, resources, and evaluation (Komalasari, 2010; Komalasari and Saripudin, 2015; Saripudin and Komalasari, 2016a). Thus, learning media is among the principal learning components.

In the global era, selection and use of media should consider the development of science and technology by heeding the values to nurture the character of students. A type of media that is viewed effective in learning is value-based interactive multimedia. Multimedia is a blend or a mix of two or more media formats such as texts, graphics, animations, and videos to integrate information into computer (Heinich et al, 2005; Vaughan, 2004; Mayer, 2009). Interactive multimedia is the use of a computer to blend texts, graphics, audio, moving images (video and animation) into a single entity with proper links and tools to enable users of multimedia to navigate, interact, create, and communicate" (Hofstetter, 2001). Interactive multimedia exhibits these characteristics: displaying more than one converging media, interactive, and independent (Munir, 2012; Sutopo, 2003).

Utilization of multimedia in learning serves as a possible solution to enhance the quality of learning in class, and as a viable alternative to overcome the limitations of teachers in teaching (Daryanto, 2010). In addition, multimedia in learning functions as a facilitator, a transmitter, a connector, and others. Multimedia in learning may allow the communication process to be more effective in order to reach the desired goal, i.e. changes in students' behavior (Munadi, 2008).

Instructional multimedia should involve students in its creation and utilization, so as to elevate students' creativity. It can also empower students in active learning. Institutes of teachers' education offer a specific course of Instructional Media and Information Communication and Technology (ICT). In this course, instructional multimedia should be developed and implemented as part of students' project through integrated practice. This means that the students establish their own instructional multimedia to be presented in class, which later can be applied in teaching practicum in school.

Therefore, a Research and Development-based study on a modest scale to produce a value-based interactive multimedia integrated practice assumed to effectively nurture students' character is called for. This type of model will be developed in the course of "Instructional Media and ICT in Social Science Education" at the Department of Social Sciences Education and its application will be integrated into teaching practicum in school.

This study aims to describe the development of value-based interactive multimedia in teaching social science education through integrated practice and its impact on the character formation of students. In particular, this study aims to describe: i) a conceptual model of value-based interactive multimedia through integrated practice for the formation of students' character; ii) its implementation; and iii) its impact on the character formation of students.

### RESEARCH METHODOLOGY

This research was conducted using Research and Development Design (R&D) of Borg and Gall (1989). The method used is an explorative method to discover a model and an experimental method to test the model. Subjects were students of the Department of Social Science Education at Indonesia University of Education in the course of Instructional Media and ICT in Social Science Education academic year 2016/2017, totaling 92 people: 50 students of the experimental group and 42 the control.

Data collection instruments used in this study include: (i) observation sheets (ii) documentation study; (iii) focus group discussion; and (iv) questionnaires. Borg and Gall's (1989) model is adapted and modified into four stages, namely: 1) a preliminary study; 2) preparation of a conceptual model; and 3) validation and revision of the model; and 4) implementation of the model.

Qualitative data analysis is carried out through the following steps: (1) data reduction by summarizing reports, noting the key points that are relevant to the research focus; (2) systematic data organization based on specific categories and classifications; (3) data display in the form of tables or graphics so that the relationship among the data is clear and coherent; (4) cross-site analysis by comparing and analyzing the data in depth; and (5) presentation of the findings, drawing conclusions in the form of general trends and the implications of its implementation, and recommendations for the development (Fraenkel and Wallen, 2006). Quantitative analysis is performed through attitude scale by using two different tests of mean/gain score (Shadish, et.al:2002).

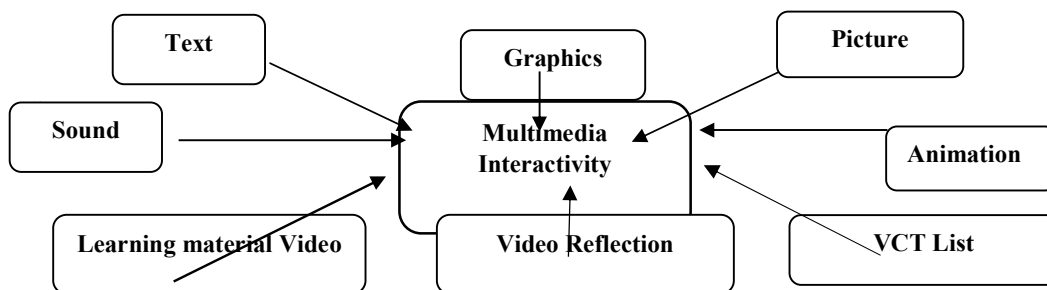
### RESEARCH RESULTS

#### **The conceptual model of value-based interactive multimedia development through integrated practice**

Value-based interactive multimedia in social science education is integration of the values of life and social studies learning materials into interactive multimedia by involving students through an integrated practice in college and school. In light of this, a number of developmental principles emerge.

1. Developing core competencies and basic competencies in the social studies curriculum of 2013 and developing the values of character, unearthed through "contract of character" at the beginning of the semester.
2. Developing principles of living values education (Tillman, 2004: xv; Yunianto, 2009) which include: undertaking reflection, imagining widely, training relaxation and focus, expressing artistic creation, cultivating social skills, enhancing cognitive awareness about justice, nurturing social harmony, and gathering cultural values.
3. Applying the principle of interactive multimedia development. The interactive multimedia concept under examination combines and synergizes all sorts of media consisting of texts, graphics, audio, video, and interactivity (Green & Brown, 2002). Interactivity is designed to enable a person (student) as a user to access various forms of media as a new way to present and share group work so as to provide motivation and satisfaction for the students. Among the media types integrated into multimedia are texts, pictures/photographs/ posters, animations, videos, and list of Value Clarification Technique (VCT) in a single power point material. Each media has the following contents:
  - a. Texts, containing facts, data, concepts, principles, procedures, and values-moral norms (living values);
  - b. Pictures, photos, posters, comics, used as a stimulus to clarify learning materials and values;
  - c. Graphs, charts, and diagrams, used to present data issues/problems/phenomena that exist in the real life;

- d. Animation, in the form of audio-visual media that contains cartoon stories packed with interesting, rich, and conflicting values, and stimulates students to think, clarify, reflect and apply the values of life;
  - e. Sounds, intended to give effect to make the material more attractive and easy to understand;
  - f. Learning material videos, containing clarification of learning material in the form of facts, data, concepts, principles and procedures presented in the form of video lessons;
  - g. Video reflection, in the form of audio-visual media which contains a movie about the phenomenon in everyday life that motivates students to apply the values of life;
  - h. VCT List, containing a list of symptoms in the form of behavior statements and how the frequency of such behavior is applicable in everyday life, along with the rationale for the application of such behavior.
- Interactivity involving some of the above components facilitates students as teacher candidates to make a power point that integrates a mix of media types (multimedia) that have been selected and developed. Value-based multimedia interactivity can be seen in figure 1.



**Figure 1:** Interactivity as the Center for Multimedia Applications

The development of value-based interactive multimedia in instructional media and ICT in social science education is to:

- a. foster capacities of social science student teachers in analyzing core competencies, basic competencies, indicators, and materials to be developed into a more appropriate and effective instructional media in achieving social science competences (social knowledge, social attitudes, and social skills) of the students;
  - b. assist student teachers in establishing the criteria of value-based instructional media in accordance with the material to be covered.
  - c. assist student teachers in choosing various types of media combined into a multimedia (texts, pictures/ photographs/posters, animations, videos, and VCT-list) in a single power point material.
  - d. assist student teachers in making a power point that integrates a variety of media (multimedia) that have been selected and developed. The power point is then burned into a Multimedia CD per subject matter.
4. Applying the integrated practice
- Practical integrated activities refer to an experience-based curriculum prepared with the motivation and experience of students involved in a particular activity. Practical integrated activities are defined as an integrated practicum activities, where the integration is performed through interactive multimedia production practices in classrooms in colleges and in schools. With the experience gained from the practical integrated activities, students' desire to investigate the use of media in real terms in schools, the operational capability of value-based interactive media, and of course students' knowledge-attitude-social skills is developed simultaneously, comprehensively, and an integrated manner. This practical integrated approach blends project-based learning model and work-based learning in lectures.

#### **Implementation of Value-based Interactive Multimedia through Integrated Practice**

Following are measures in developing interactive multimedia through integrated practice in Instructional Media and ICT of Social Science Education:

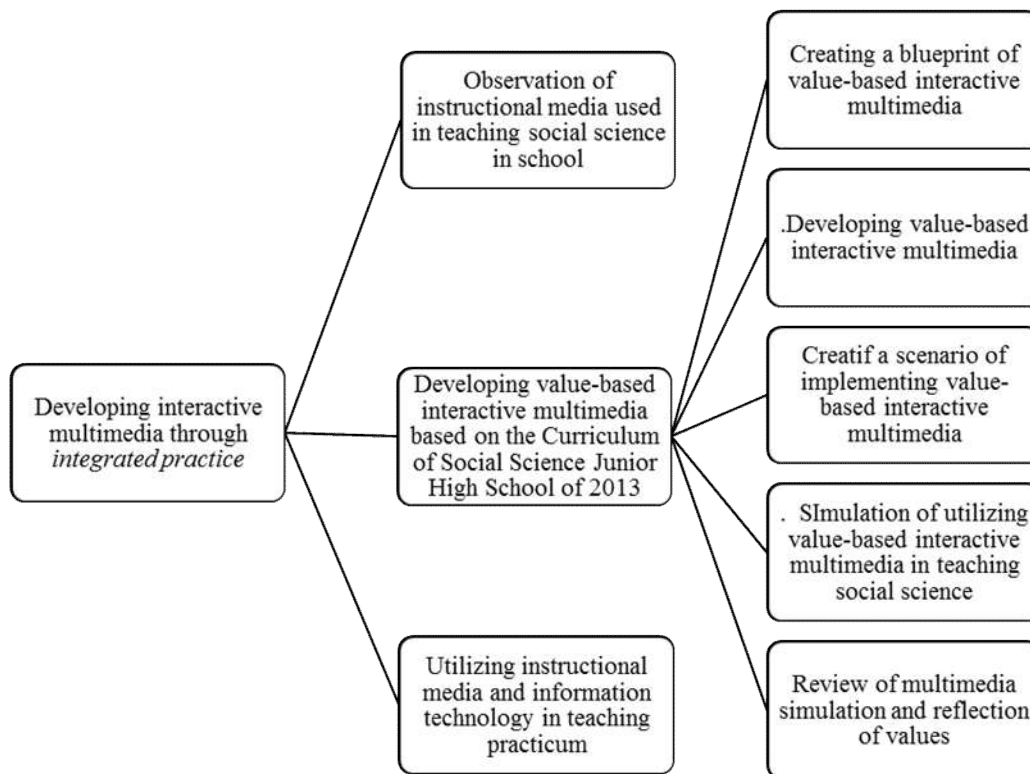
1. Negotiation of Subject Matter and Character  
At the first meeting, students and faculty brainstorm the instructional material to be studied and learning strategies to be implemented as well as the assessment systems. In addition, characters to be developed in the classroom are clarified and agreed upon. Results of the negotiation of subject matter and character are then formulated into classroom manuals that will serve as a joint commitment among the teacher and students.
2. Presentation of instructional media about social studies learning and life values.  
At several meetings, learning materials related to instructional media and ICT in social science education will be presented according to the syllabus and lecture reports.
3. The class is divided into 12 groups on the basis of the topics of social science education of junior high school with regard to the core competencies and basic competencies in social studies curriculum of 2013.

4. Exploration of life values based on the social science topics in line with the curriculum of 2013, which include religious and social values.
5. Integrated Practice
 

Integrated practice integrates theory and practice in making the media, as well as classroom lectures with practice in schools. Steps under integrated practice activities include:

  - a. School observation, whereby students make observations in social studies teaching in school, with a focus on its instructional media and its utilization in learning. In this activity, students together with the teacher explore the various types of learning media, problems in the construction of instructional media, and the solution.
  - b. Developing value-based interactive multimedia. In this activity, students integrate the social science learning material with values of life into interactive multimedia. Through project-based learning, students generate products in the form of learning scenarios by utilizing interactive multimedia and developing interactive multimedia based on values in accordance with the relevant topics and subtopics, core competencies and basic competencies in the curriculum of 2013.
  - c. Teaching simulation by using value-based interactive multimedia. This is done through the following steps: i) describing the learning scenario; ii) presenting the learning materials using the prepared multimedia; and iii) exploring and clarifying the values extracted from the learning material presented in the interactive multimedia. This simulation process of teaching is reviewed by another student assigned as an observer.
  - d. Review of the simulation is undertaken by the lecturer. At the end of the interactive multimedia presentation, the lecturer provides clarification and review of the student's presentation. The review includes evaluation of the learning scenario, presentation/simulation of interactive multimedia, and interactive multimedia content (creativity, appropriateness of the content with the purpose, and clarity of the message), as well as a wealth of values in interactive multimedia.
  - e. Reflection on life values (character). The lecturer together with the students reflect on the values of life embedded in the interactive multimedia that the presenting group is exhibiting. In this respect, the lecturer and the students explore, clarify, internalize, and create an action plan regarding the application of values in everyday life in a family environment, campus, community, and the country.
  - f. Implementation of value-based interactive multimedia in teaching social studies at school by involving teaching practicum students by way of work-based learning. The interactive multimedia the students developed is then utilized in the teaching practicum process in school in order to enhance the quality of social science learning.

Developing value-based interactive multimedia through integrated practice can be seen in figure 2.



**Figure 2:** Developing Value-based Interactive Multimedia through Integrated Practice

**Effect of Application of Value-Based Interactive Multimedia through Integrated Practice on Students’ Character Development**

The test analysis of n – gain reveals that in each class, the experimental class and control class, students character increased, but there is a difference in the degree of increase between these two classes. In the control class, the increase is 0.30, which means that the increase is at n-gain  $g < 0.7$ , a category of medium. Meanwhile, the increase in the experimental class occurs at 1.04, equivalent of n-gain  $> 0.7$ , a high category. N-gain test results can be seen in the table 1.

**Table 1:** Increase in Character Score in Pretest and Posttest of Control and Experiment Groups

<i>Data</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Variants</i>	<i>Gain</i>	<i>N Gain</i>
<i>Pretest</i> in control	56.65	5.641	31.823	1.32	0.30
<i>Posttest</i> in control	69.93	4.752	22.584		
<i>Pretest</i> in experiment	57.27	5.511	30.369	4.48	1.04
<i>Posttest</i> in experiment	106.28	8.693	75.576		

Based on the analysis of n - gain test, it can be concluded that in both experimental and control classes increase occurs; however, increase in the experimental is greater than that in the control. Based on calculation of n-gain significance, the significant value is smaller than  $\alpha$  (0.05), indicating that there is a significant difference in the character development of the students in the experimental and control groups.

Value-based interactive multimedia through integrated practice in instructional media and ICT of social science education can nurture the character of students. This is apparent on the students’ behavioral patterns in the process of developing the media. Descriptions of Students character that developed through Value-Based Interactive multimedia development can be seen on table 2.

**Table 2:** Characteristics of Students in Value-Based Interactive Multimedia Development

No	Character	Behavioral Patterns in Developing Interactive Multimedia
1	Creativity	Creativity in making instructional scenarios and produce value-based interactive multimedia products
2	Curiosity	Increased curiosity on technology, as demonstrated by willingness to learn to develop interactive multimedia
3	Appreciation	the ability to appreciate and review interactive multimedia work of their own and other students
4	Hard work	Optimal performance in planning/designing media/creating a scenario, developing multimedia, and simulating it in class, as well as utilizing it in school;
5	Self-reliance	Individual work management in accordance with sub-topics and simultaneously coordinating with the groups of the same topic
6	Honesty	Citing sources from the internet and others and using them as materials used in developing value-based interactive multimedia
7	Discipline	Accuracy in completing the task in accordance with the agreed upon timetable and goals

## DISCUSSION

Interactive multimedia evinces characteristics that distinguish it from other types of instructional media, namely, it is interactive; has more than one converging media (audio and visual); provides convenience of feedback; give the freedom to independently determine the topic of learning and conduct the ease of systematic control in teaching social science (Sutopo, 2003; Munir, 2012). In addition, interactive multimedia offers the following advantages: 1) learning is more innovative and interactive; 2) teachers will always be required to be innovative in seeking a breakthrough in teaching; 3) it combines texts, pictures, audio, music, animated images or video in a single entity in order to achieve the learning objectives; 4) it boosts students' motivation in the learning process; 5) it visualizes the material perceived difficult to be explained merely through a lecture or a conventional props; and 6) it trains students to be more independent in gaining knowledge. Given these characteristics and advantages, the students are more motivated to attend lectures and understand the learning material.

Interactive multimedia applied in social science education classrooms is a value-based one. The values of life are integrated in interactive multimedia, so that the instructional media not only motivate the students to learn and understand the material, but also explore, clarify, internalize the values and apply them in everyday life. This is in accordance with the concept of micro character education in schools (Ministry of National Education, 2010) that values should be integrated in the learning activities. Komalasari (2012) and Komalasari et al. (2014) assert that character values must be integrated in learning across all of its components, including materials, methods, media, resources, and assessment. Thus, media as one component of learning should be based on values. Value-based interactive multimedia complement character education in class, namely teaching or guidance to the students to make them realize the truth, virtues, and beauty through the process of considering the proper value and consistent actions. Character education is aimed to help students to understand, realize and experience values and be able to apply them in their life (Mulyasa, 2005).

Value Integration in interactive multimedia can be done through a variety of character educational approaches as stated by Banks (1990) as follows: 1) Evocation, an approach that provides the students the opportunity and freedom to freely express their affective response to stimuli they receive; 2) Inculcation, an approach in which the students receive a stimulus directed toward a poised state; 3) Moral Reasoning, an approach in which intellectual taxonomic transactions occur in seeking a solution to a problem; 4) Value Clarification, an approach through targeted stimulus in which the students are invited to seek clarity of the message of moral values; 5) Value Analysis, an approach in which the students are stimulated to perform analysis of moral values; 6) Moral Awareness, an approach in which the students receive a stimulus and raise an awareness of certain values; 7) Commitment Approach, an approach in which the students are invited to agree on the existence of a mindset in the character educational process from the outset; and 8) Union Approach, an approach in which the students are directed to implement values in their real life. Thus, value-based interactive multimedia can exhibit the knowledge, skills, and attitudes of values. Values can be presented in a variety of interactive multimedia, for example, through a motivational video or a video of character. Not only that, the lecturer should facilitate the students to clarify the value out of the video, and reflect on how it is applied in everyday life in a family environment, campus, community, and the country.

Interactive multimedia in instructional media and ICT learning of social science education is done through integrated practice (Xiaoman, 2006). This shows two forms of integrated practices, namely:

1. Integration of theory and practice in manufacturing instructional media in social science education; the students are equipped with an understanding of the relevant theory of instructional media and ICT as well as how to develop the practice of instructional media and ICT according to the curriculum of 2013.
2. The integration of classroom lectures with practice in schools; the students develop instructional media and ICT in social science education in classroom lectures based on the analysis of observation of instructional media used in schools, and the result of the development of instructional media and ICT will then be utilized in schools in teaching practicum activities.

This activity will be more beneficial to the students of social science education as future teachers in developing and utilizing instructional media and ICT in social science education. It is also in line with the notion of Edgar Dale (Heinich, et al., 2005) that hands-on experience is the most effective medium for the achievement of learning outcomes because it provides a concrete experience to the students.

Value-based interactive multimedia development through integrated practice can develop the character of the students. This further confirms that character education can be integrated in the lectures, either through direct learning in the classroom and outside the classroom, and learning is not directly in the form of nurturant effects of learning activities (Ministry of National Education, 2010; Komalasari, 2012 ). The substance of value is not solely captured and taught, but it is rather internalized, and standardized as an inherent part of the personal qualities of a person through the learning process. Therefore, the educational process is basically a civilizing process that produces a civilized man, including a cultured man (Hermann, 1972; Saripudin and Komalasari, 2016b)

## CONCLUSION

Value-based interactive multimedia in social science learning is the integration of the values of life and social studies learning materials into interactive multimedia by involving students through an integrated practice in classrooms. The model was carried out through several steps: negotiation of subject matter and character, material presentation, group division based on the social science topics of junior high school, exploration of character values according to the topics, and integrated practice (initial observation to school, development of multimedia scenario, multimedia production, multimedia simulation in the classroom, and practice on the use of multimedia in school). There is a significant difference between the class using value-based interactive multimedia through integrated practice with that of a conventional classroom. Therefore, students at institutes of teacher education, as prospective teachers, should be equipped with the ability to craft value-based interactive multimedia through a combination of theory with practice, and a combination of practices in the classroom and in school.

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## REFERENCES

- Banks, J. A. (1990). *Teaching Strategies for the Social Studies: Inquiry Valuing and Decision Making*. (4<sup>th</sup> Ed.) New York: Longman.
- Borg, W. R., Gall, M.D., (1989). *Educational Research: An Introduction* (5<sup>th</sup> ed). New York: Longman.
- Daryanto. (2010). *Media Pembelajaran*. Bandung: PT. Sarana Tutorial Nurani Sejahtera.
- Fraenkel, J.R., Wallen, N.E. (2006). *How to Design and Evaluate in Research*. New York: The Mc.Graw-Hill Companiew, Inc.
- Green, T.D., Brown, A. (2002). *Multimedia Projects in the Clasroom*. United States of America: Corwin Press, Inc.
- Heinich, R., Molenda, M., Russell, J. D., & Smaldino, S.E. (2005). *Instructional Media and Technology for Learning, 7th edition*. New Jersey: Prentice Hall, Inc.
- Hermann, (1972). "Value Theory (Axiology)". *The Journal of Value Inquiry* . VI:163-184.
- Hofstetter, F.T. (2001). *Multimedia Literacy*. Third Edition. McGraw-Hill. International Edition: New York.
- Komalasari, K. (2010). *Pembelajaran Kontekstual: Konsep dan Aplikasi*. Bandung: Refika Aditama.
- Komalasari, K. (2012). The Living Values-Based Contextual Learning to Develop the Students' Character. *Journal of Social Sciences*. 8 (2), 246-257. DOI: 10.3844/jssp/2012.246.251.
- Komalasari, K. Saripudin, D., Masyitoh, I.M. (2014). Living Values Education Model in Learning and Extracurricular Activities to Construct the Students' Character. *Journal of Education and Practice*. 5 (7), 166-174.

- Komalasari, K., Saripudin, D. (2015). Integration of Anti-Corruption Education in School's Activities. *American Journal of Applied Sciences*. 12 (6), 445-451. DOI: 10.3844/ajassp2015.445.451.
- Komalasari, K and Sapriya. (2016). *Living Values Education in Teaching Materials to Develop Students' Civic Disposition*, The New Educational Review. 44 (2), 107-124.
- Lickona. (1991). *Educating for Character (How Our Schools Can Teach Respect and Responsibility)*. New York: Bantam Books.
- Mayer, R.E.(2009). *Multimedia Learning*, Yogyakarta: Pustaka Pelajar,
- Ministry of National Education. (2010). *Desain Induk Pendidikan Karakter*, Jakarta: Kementerian Pendidikan Nasional.
- Mulyasa, E. ( 2005) . *Menjadi Guru Profesional Menciptakan Pembelajaran Kreatif dan Menyenangkan*. Bandung: Remaja Rosda Karya.
- Munadi, Y. (2008). *Media Pembelajaran*. Ciputat: Gaung Persada Press.
- Munir. (2012). *Multimedia: Konsep dan Aplikasi dalam Pendidikan*. Bandung: Alfabeta.
- Saripudin, D. and Komalasari, K., (2015). Living Values Education in School's Habituation Program and Its Effect on Student's Character Development. *The New Educational Review*. 39 (1), 51-62.
- Saripudin, D. and Komalasari, K., (2016a). The Development of Multiculturalism Values in Indonesian History Textbook. *American Journal of Applied Sciences*. 13 (6), 827-835. DOI: 10.3844/ajassp.2016.827.835.
- Saripudin, D. and Komalasari, K. (2016b). Culture-based Contextual Social Studies Learning for Development of Social and Cultural Values of Junior High School Students. *The Social Sciences*. 11 (23), 5726-5731. DOI: 10.3923/sscience.2016.5726.5731.
- Shadish, W.R., Cook, D.T., Campbell, T.D. (2002). *Experimental and Quasi-Experimental Design for Generalized Causal Inference*. Boston, New York.: Houghton Mifflin Company
- Sutopo, A.H. (2003). *Multimedia Interaktif dengan Flash*. Yogyakarta: Graha Ilmu.
- Tillman, D. (2004). *Living Values: Activities for Children Ages 8-14*. Jakarta: PT Gramedia Widiasarana Indonesia.
- Vaughan, T. (2004). *Multimedia: Making It Work*. Edisi keenam. Yogyakarta: Andi.
- Yunianto (2009). *Living Values: An Educational Program Educator Training Guide Pendidikan Nilai: Program Pendidikan LVEP Panduan Pelatihan bagi Pendidik* [online]. Available: [http://heruyunianto.blogspot.com/2009/05/living-values-educational-program\\_26.html](http://heruyunianto.blogspot.com/2009/05/living-values-educational-program_26.html) [Accessed on Februari 9, 2014]
- Xiaoman. Z. (2006). Moral Education and Values Education in Curriculum Reform in China. *Front. Educ.China*, 2: 191-200.