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Development of Interactive Multimedia Learning Courseware to Strengthen Students' Character

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Abstract: The development of information technology rapidly has an impact on the changing paradigm of education. On the other hand, education holds an important responsibility to create students who have a good and strong character. This research aims to: 1) describe the concept and framework of interactive multimedia courseware; 2) test the feasibility of interactive multimedia courseware by experts and practitioners; 3) test student responses to the use of interactive multimedia courseware. This research and development involved experts, teachers, and students. The data were collected using expert validation sheets, teacher questionnaires, and student questionnaires. They were then analyzed using the descriptive statistics analysis based on mean and percentage. This research yielded interactive multimedia courseware called IMONEC (Interactive Multimedia courseware integrated with Bandura's Observational learning model and National historical Event to strengthen students' Character) that integrates three important components: the principles of interactive multimedia learning; Bandura's observational learning model; and the noble values and messages of national historical events to strengthen students' characters. The framework of the interactive multimedia courseware consists of the title, user instruction, home, core competency and basic competency, concept map of material, learning material, and quizzes. The results of the expert validation, teacher questionnaire, and student questionnaire showed that the interactive multimedia courseware is feasible for use in learning and effective in strengthening students' characters.

Keywords: *Interactive multimedia, observational learning, national historical event, character.*

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Introduction

A good and strong character is very important for an individual as it will affect their behavior in their personal, social, and country lives. Thus, efforts to strengthen characters become a very important agenda for the country as children will be future leaders, in addition to maintaining the nation's existence (Agboola & Tsai, 2012; Apriani, 2016; Hidayati et al., 2014). As in Indonesia, strengthening of character is one of the targets in the Indonesia Vision for 2005-2025 (Laksono, 2013). It is carried out from the age of children to adults. Strengthening the characters of children is the responsibility of the family, school, and community (Minister of Education and Culture of The Republic of Indonesia [MECRI], 2018).

Among the three, school education is a key factor in the development of children's characters (Ash-shidiqqi, 2018; Laksono, 2013). Strengthening the character of children in school can be realized through learning activities, through habituation in daily activities at school and extracurricular activities (Ash-shidiqqi, 2018; Teacher Association of the Republic of Indonesia [TARI], 2014; MECRI, 2018). A good learning process should result in holistic cognitive, affective, and psychomotor changes in students (The Minister of Education and Culture of The Republic of Indonesia (MECRI), 2016). The learning environment, including methods, media, and learning resources, must be directed to reach all the three domains. Learning should be carried out by focusing on the achievement of not only the cognitive domain as is the case today, but also the affective domain. Thus, the learning process should also contain values to be internalized within students in the context of character education. These values include tolerance, democracy, national spirit, love of the motherland, love of peace, social care, responsibility, and so on (MECRI, 2018).

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One of the current educational problems is that character education has not been implemented properly in schools (Agung, 2011). Education continues to strive to increase the value of student knowledge that is manifested in the results of the semester and national examinations, but it is not in line with efforts to strengthen the character of children. Therefore, the educational output lacks the character needed to live in society. Education has experienced disorientation and inefficiency, i.e. the implementation of education is not coherent with the needs and problems of the nation (Sukasni & Efendy, 2017; TARI, 2014). Education only contains textual materials, exercises, and tests to achieve the cognitive targets of each subject.

The learning process in schools is oriented to increasing knowledge competence. Conventional learning with the lecture method is often used by teachers both at elementary and upper school levels (Hapsari et al., 2019). The learning resources and media used are in the form of textbooks and PowerPoint slides that contain descriptions of textual and rote material. Teachers only copy the text from the book to the PowerPoint and deliver it by reading the text, so that the material is abstract (Cahyono et al., 2014). Education that is dominated by cognitive achievement results in the weak characters of students (TARI, 2014). The problem of students' characters is shown by the weakness of nationalism, lack of unity, lack of tolerance, individualism, weak mutual cooperation, and other bad behaviors (Saidek et al., 2016; Sardiman, 2012). This weak character then results in various conflicts. In the last few years, Indonesia has dealt with the increasing cases of such as the spread of hoax news, quarrels between religious communities, human rights violations, violence, nation disintegration, intolerance, radicalism, and even terrorism (Sardiman, 2012; Solihin, 2017; INFID [International NGO Forum on Indonesian Development], 2018).

Civic Education is a subject that carries a mission to educate children to become citizens with good characters, so that there is a process of value integration in its implementation (Komalasari & Rahmat, 2019; Winarno et al., 2018). Civic Education aims to encourage students to have civic knowledge, civic skills, and civic disposition (characters) (Guilfoile & Delander, 2014; Harmanto et al., 2018; Komalasari, 2009). Civic Education can create the students who are intelligent, skilled, and have good characters as part of and the next generation of the nation (Mulyono, 2017). This is in line with the goal of national education to create students who are knowledgeable, skilled and have good characters (The Minister of Education and Culture of The Republic of Indonesia (MECRI), 2003). Therefore, to face the problem of characters, it is necessary to transform education, especially Civic Education. Civic Education is not only in the form of knowledge transfer, but also as a means of internalizing values in order to strengthen students' characters.

Many countries in the world have experienced national historical events that are important for the life journey of their countries and citizens, including Indonesia (Hooker, 2003; Huang & Liu, 2018; Liu & Hilton, 2005; Wallach., 2010). Indonesia has experienced various national historical events, including the national awakening event, the basic formulation of the state, the youth pledge, the proclamation of independence, and others (Sardiman, 2012; Saryono et al., 2018). Not only are Indonesia's national historical events past events, but they also contain lessons, wisdom, messages, examples, and patterns that can be learned now or in the future (Saryono et al., 2018). These events have many messages and noble values that really need to be internalized in the younger generation. These noble values include the value of struggle, the love of the motherland, mutual cooperation, the spirit of brotherhood, tolerance, collaboration, togetherness, unity and many others (Sardiman, 2012). The internalization of these values can be to strengthen the characters of students and subsequently to overcome or prevent various national problems.

Nowadays, the students only understand the basic information of the various national historical events, such as the date of commemoration and the figures, without knowing their meaning, including noble values and messages contained therein (Kuswono & Khaeroni, 2017; Maksum, 2015). Students are only taught through text descriptions in student textbooks and narrative PowerPoint slides. As a result, today's children are aware of and idolize fictional stories and superhero figures from other countries more than the national historical events and figures (G. Akbar et al., 2016). They only understand and follow the commemoration of national historical events each year without understanding the noble messages of these various events. Thus, it is necessary to internalize the noble values of national historical events in the learning process, especially in Civic Education for the preservation of student characters.

One of the ways to strengthen the characters of students is by applying observational learning (Social-Cognitive Theory) of Albert Bandura. Observational learning is the right method for the education of values, attitudes, and behaviors (Weiss, 2001). In building students' characters, the learning environment and cognitive factors play an important role (Tri Harinie et al., 2017). Children are individuals who are active in thinking, whose behaviors can be influenced by the observations of models that further involve cognitive processes in themselves and end in the decision whether they will adopt the behavior or not (Schunk, 2012). This learning environment includes models or figures that are the source of observations, which can be real direct models, verbal models through descriptions of figures, as well as symbolic models that are displayed through the media (Nabavi, 2012). Observational models include historical figures (Hill, 2012). Hence, to overcome the problems of students' characters can be through observational learning by observing historical events and figures.

On the other hand, the revolution of industry 4.0, which is characterized by the massive development of information technology, also demands the integration of Information Communications Technology (ICT) in education (Qomariyah et

al., 2019; Shahroom & Hussin, 2018). The issue of educational administration and the learning process have been influenced by advances in computer technology (Fitriyadi, 2013; Hamdi & Hamtini, 2016). Technological advances in education continue to be introduced to enhance education and teaching quality (Al-Rabaani, 2018). Various countries have adopted the use of ICT for learning to achieve their educational visions (Wastiau et al., 2013; Yeop et al., 2019), including Indonesia. In the last few years, Indonesia has implemented the 2013 Curriculum, which requires the integration of ICT in learning (MECRI, 2016). Different from the previous curriculum, ICT in curriculum 2013 is no longer a subject, but ICT must be integrated in the learning process for all subjects (Mahdum et al., 2019; Ratminingsih et al., 2018). The development of ICT offers various innovations in the integration of ICT in learning and, on the other hand, demands the application of ICT in learning. One of the developments of ICT in education is in the form of development of ICT-based learning media (Mahdum et al., 2019; Syawaludin et al., 2019b). Various research findings have shown various ICT-based learning media innovations with their effectiveness in improving the quality of learning (Neo et al., 2008; Nusir et al., 2013; Solihin, 2017). ICT as a source and learning media can include Internet access, PowerPoint slides, learning videos, and multimedia.

However, conventional learning with one-way teacher communication to students is still the choice of the majority of teachers (Wiana et al., 2018). Technology integration in learning in Indonesia is still quite left behind (Syawaludin et al., 2019a). The use of ICT still takes the form of a simple presentation slide (Komalasari & Rahmat, 2019). The media only contains a description of the material that is textual and theoretical. Learning contains the transfer of conceptual knowledge without any effort to develop students' behaviors or characters based on the knowledge conveyed (Komalasari & Saripudin, 2017).

In the current era of rapid technology advances, where students spend a lot of time using their gadgets (Sundus, 2017), the learning process must adjust to the needs and preferences of the students (Djamas et al., 2018). One of the uses of ICT in learning is multimedia. The development of information technology has raised the need for multimedia-based learning (Ampa et al., 2013). Many researches reveal the advantages of multimedia learning, including increasing learning motivation (Leow & Neo, 2014; Rajendra & Sudana, 2018), helping students understand the material more clearly (Gunawardhana & Palaniappan, 2016; Wu & Tai, 2016), and improving the quality of learning (Neo et al., 2008; Nusir et al., 2013).

The application of multimedia technology becomes a necessity for learning in order to develop more active, interactive, and quality learning (Ariani & Haryanto, 2010). Otherwise, students will find it difficult to pay attention and to get involved in their learning. Technological developments have caused students to become addicted and to be unable to stay far from their gadgets, which divert their attentions from their textbooks (Djamas et al., 2018).

Most of the interactive multimedia developed so far are used to improve students' cognitive skill. In Indonesia, the interactive multimedia is mostly created for mathematics, physics, biology, language, chemistry, and engineering subjects. Not many interactive multimedia have been made to strengthen the characters of students, especially those integrated with the national historical events and Bandura's observational learning model that has never been done. Therefore, there is a need to develop interactive multimedia which, in addition to increasing students' knowledge, can also strengthen the students' characters. Interactive multimedia courseware needs to be developed, which is specifically arranged by integrating three important components: the principles of interactive multimedia learning in accordance with technological developments; national historical events containing noble values and messages; and Bandura's observation learning model as an effort to shape children's characters.

This research aims to: 1) describe the conceptual and the framework of the interactive multimedia courseware; 2) test the feasibility of the interactive multimedia courseware by experts and practitioners; 3) test the student responses to the use of the interactive multimedia courseware.

Literature Review

Interactive Multimedia Learning Principles

The first principle is learning with the interactive multimedia integrates various media components. The interactive multimedia courseware is an independent computer-based learning media that integrates various elements of texts, images, photos, audio (music, narration), video, and animation in one learning application product (Hamidi et al., 2011; Komalasari & Rahmat, 2019; Nusir et al., 2013; Terentyeva et al., 2019; Umar & Susilowati, 2012). The use of the elements depends on the development needs and the material being developed. The elements of the interactive multimedia include (Munir, 2012):

a. Text: words or sentences explaining the material or instructions for using the media.

b. Graphics: pictures, photos, and charts/diagrams for illustrations, simulations of the environment

c. Video: a simulation of real objects, an overview of an activity,

d. Animation: moving pictures or live images to simulate an event

e. Audio: backsound, narration, sound effect, or conversation (speech)

The second principle is the interactive multimedia learning includes navigation and interactivity. The interactive multimedia contains links that allow interaction between the user and the media. It includes navigation that facilitates users to operate or direct their own learning directions and can provide feedbacks to them (Hamidi et al., 2011; Munir, 2012). The interactive multimedia is equipped with a controller so that students have freedom in controlling or determining the course of multimedia learning (Ariani & Haryanto, 2010; Munir, 2012).

Bandura's Observational Learning Model

Observational learning model or Social Cognitive Learning Theory is a theory initiated by Albert Bandura. The observational model can be applied to grow the characters of children. Observational learning or modeling is an appropriate method to teach attitudes, values, and behaviors (Weiss, 2001). Slavin said that observations made by a person on the environment can affect his/her cognition and behavior (Tri Harinie et al., 2017). Learning occurs through the interrelationship between behaviors, individuals (cognition), and the environment (Tri Harinie et al., 2017).

In learning, there is a modeling process that plays a role and there are environmental influences that affect individual behavior (cognitive, affective, psychomotor) (Schunk, 2012; Tri Harinie et al., 2017), starting from the input process where students observe the model and identify the behavior of the model (learning environment). There are three models in observational learning, i.e. (1) a direct model, which involves individuals directly present in front of students, (2) a verbal model, which is through a description of a behavior, and (3) a symbolic model, which involves real or fictional characters displayed through the media such as books, films, computers, and so on (Nabavi, 2012).

The model in this case is a symbolic historical figure and event observed through the media, especially the interactive multimedia courseware. After the observation, the cognitive process within the students will then occur, i.e. the students consider various information from the model observation. The model provides information about the behavior and its consequences for him/herself (Hill, 2012; Schunk, 2012). It ends with a decision whether students will adopt the behavior of the model, which will be theirs or not adopt the behavior or adopt some. The students' decisions are based on the results of cognitive processes in them.

They usually adopt behaviors that are seen as positive and provide benefits. On the other hand, they can avoid behaviors that are unnecessary or unprofitable or that have a negative impact. Therefore, the students do not simply imitate what the model exemplifies, but there is a cognitive process in making a decision (Schunk, 2012). The students' behaviors are not a dictation or order from the teacher, but of personal decisions that are influenced by cognitive processes because one important factor in Bandura's theory is that children are not passive, but active individuals that tend to want to regulate/control their own behaviors (Schunk, 2012; Zimmerman & Schunk, 2004).

National Historical Event

One of the national historical events integrated that will be contained in the interactive multimedia courseware is determined. Various national historical events that have been experienced by Indonesia include the events of the national awakening, youth pledge, proclamation, and so on (Sardiman, 2012; Widodo, 2012). These historical events are integrated with Civic Education learning materials as mandated in the Civic Education curriculum.

Historical events contain messages and values that can form good citizens and lessons that can be taken in order to overcome various current problems and prevent problems in the future (Maksum, 2015; Sardiman, 2012; Widodo, 2012). National historical events contain the noble values and messages conveyed through various media such as texts, images, videos, and animations, making it easier for students to understand the material. These noble values include the value of struggle, the love of the motherland, mutual cooperation, the spirit of brotherhood, tolerance, collaboration, togetherness, unity and many others (Sardiman, 2012).

Methodology

Research Goal

This study used a research and development approach. The main focus of this research was to develop an interactive multimedia courseware and test the feasibility and effectiveness of the interactive multimedia courseware. The research and development procedure as illustrated in Figure 1.

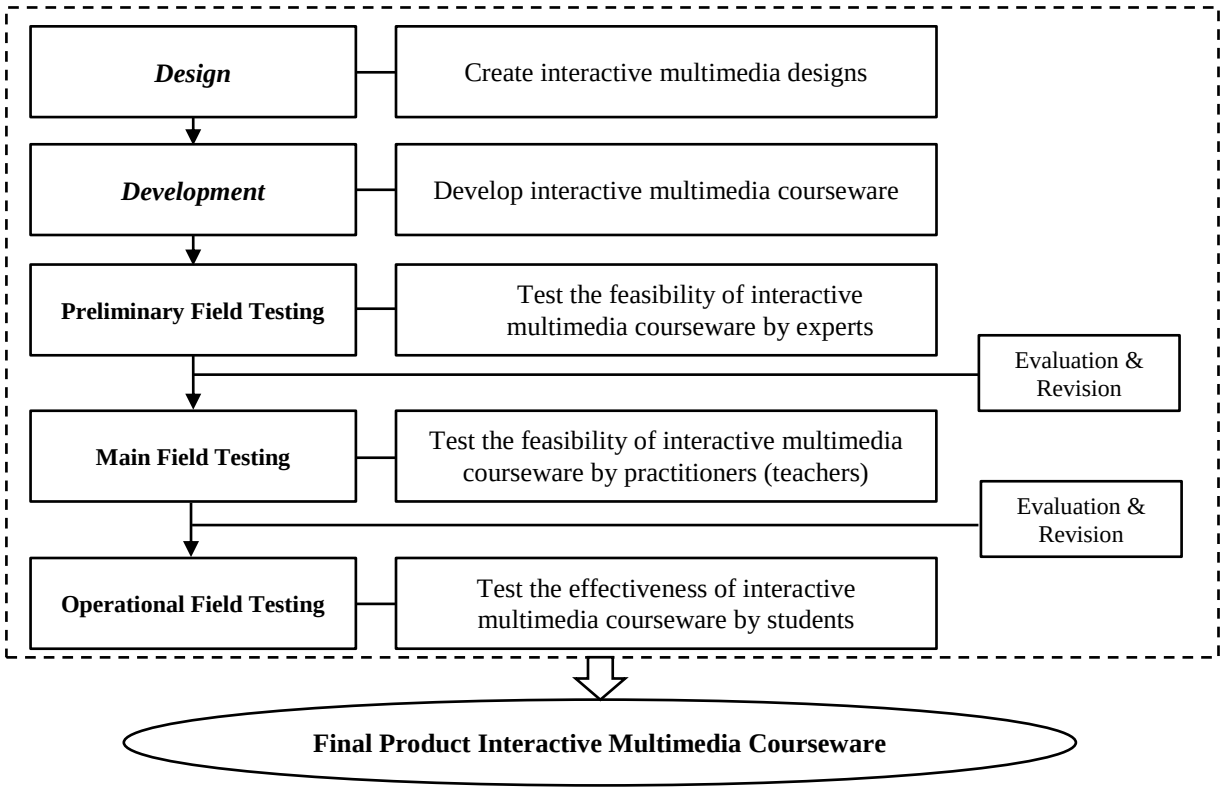

Figure 1. The Procedure of Interactive Multimedia Courseware Development

The first stage is the design stage. An interactive multimedia courseware design is created at this stage which covers media formats, materials, content and components. The development phase involves preparing flowcharts, story boards and developing interactive multimedia courseware using Swish Max software.

Interactive multimedia courseware developed during the preliminary field testing stage has been further validated by media and materials experts. The validation results were analyzed and revised on the basis of recommendations from media and content experts. In the main field testing stage, the practitioners, namely the Civics Education teacher, conducted the feasibility test for interactive multimedia courseware. In addition, analyses and changes are based on feedback from the experts and practitioners. The last stage is operational field testing, which tests the interactive multimedia courseware to find out how effective interactive multimedia courseware is.

Sample and Data Collection

This research was conducted in Surakarta, Central Java, Indonesia. The research subjects were 2 experts who have expertise in learning technology and character education, 6 Civic Education teachers as practitioners, and 30 eighth-grade students as users. The data were collected using an expert validation sheet instrument, a practitioner questionnaire, and a student questionnaire. The validation sheets and questionnaires were prepared with a Likert Scale ranging from 1 to 4. Data collection instruments were tested for construct validity and reliability. Expert validation sheets, practitioner questionnaires, and student questionnaires are valid and reliable. Based on the results of the Alpha Cronbach test it is known that the reliability score is 0.839; 0.684; and 0.715.

Analyzing of Data

The data from expert validation sheets, practitioner and user questionnaires were analyzed using the descriptive statistics analysis based on mean and percentage. According to Riduwan (2010) data analysis in the form of a percentage using the formula:

$$P = \frac{F}{N} \text{ x } 100\%$$

Description:

P = Percentage of respondents' answers on each item

F = Score of respondents' answers on each item

N = Maximum score for each item

Criteria for determining the feasibility of the interactive multimedia courseware in Table 1.

Table 1. Feasibility Criteria for Interactive Multimedia Courseware

Percentage	Category
0% - 20%	Very Poor
21% - 40%	Poor
41% - 60%	Fair
61% - 80%	Good
81% - 100%	Very Good

The percentage of calculation results will show the validation and feasibility categories of the media by experts, practitioners, and students, whether very poor, poor, fair, good or very good. These criteria are used as an evaluation material and a basis for media revision/improvement.

Results

The Concept and the Framework of IMONEC (Interactive Multimedia courseware integrated with Bandura's Observational learning model and National historical Event to strengthen students' Character)

The result of this research and development is an interactive multimedia courseware, called IMONEC. IMONEC is a technology-based learning media that integrates three important components: the principles of interactive multimedia learning, Bandura's observational learning model (Bandura's Social Cognitive Theory), and (noble values contained in) national historical events; which aim to strengthen the characters of students. The concept of IMONEC is illustrated in figure 2.

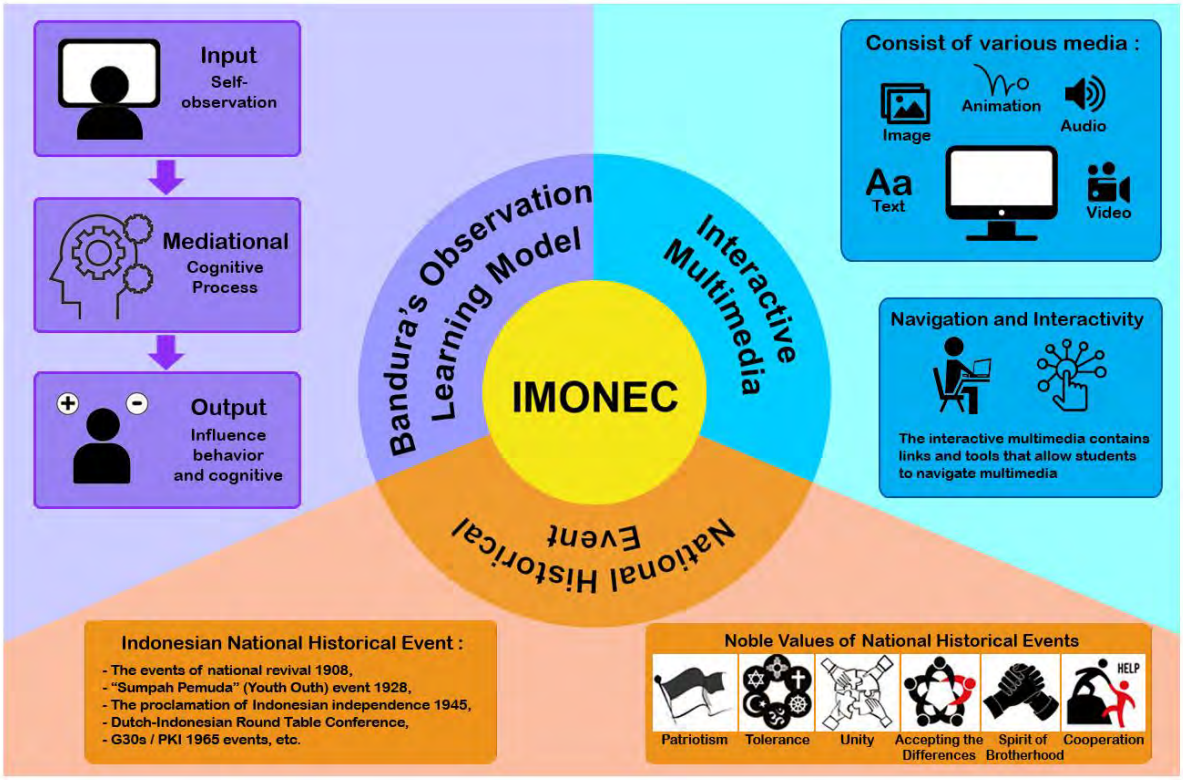

Figure 2. The Concept of Interactive Multimedia Courseware "IMONEC"

Research and development yielded interactive multimedia courseware in .exe format which consists of components: title, user instructions, home, CC and BC, concept map of material, learning materials, and quizzes. The framework of interactive multimedia in Figure 3 follows.

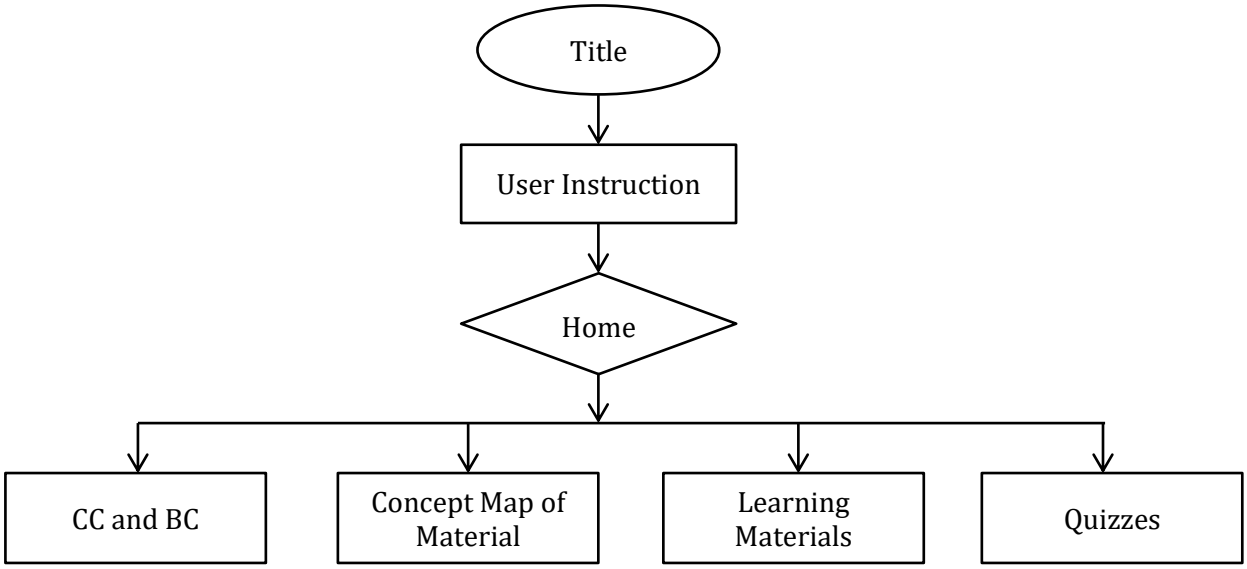

Figure 3. The Framework of IMONEC

Explanation of each of the components is as follows.

a. Title: Contains interactive multimedia courseware titles and title illustrations.

b. User Instruction: instructions for users/students to operate interactive multimedia courseware. Includes user flow which is the path of interactive multimedia operations from the starting point (title) till complete the task (quizzes); and the explanation of the buttons' functions.

c. Home: contains menus that can be selected according to user needs, namely CC & BC, concept maps, materials, quizzes, and profiles.

d. Core Competency (CC) and Basic Competency (BC): contains Core Competency and Basic Competency are taken from the Civic Education Curriculum and the indicator of learning achievement.

e. Concept map of material: contains a concept map of the material to be learned

f. Learning material: the explanation of material presented through multimedia content consisting of text, images, video, animation, audio, including value clarification and application of values in life.

g. Quizzes: contains several questions of the cognitive and affective domains.

The Result of Expert and Practitioner Validation

A pilot study of the interactive multimedia courseware that integrates the principles of interactive multimedia learning, Bandura's observational learning model, and national historical events of Indonesian Youth Pledge has been validated. The validation was carried out by two experts who have expertise in this field and the Civic Education teachers as practitioner. The results of the expert and practitioner validation are illustrated in table 2.

Table 2. The Result of Expert and Practitioner Validation

Indicators		Percentage
Expert Validation		
1. Media Expert		
	Technical Quality	91,67 %
	Balance	91,67 %
	Integration	91,67 %
	Efficiency	100 %
	Effectiveness	100 %
	Interactivity	100 %
Average Score of Media Expert Validation		**95,83 %**

Table 2. Continued

Indicators		Percentage
2. Materials Expert		
	Relevance	91,67 %
	Completeness	93,75 %
	Accuracy	100 %
	Systematics	100 %
	Language Rules	100 %
	Readability and Communicability	100 %
Average Score of Material Expert Validation		**97,57 %**
Practitioner Validation		
	Usability	85,83 %
	Attractiveness	86,46 %
	Support learning achievement	86,46 %
	Student centered	84,72 %
	Arrangement of material	84,38 %
Average Score of Practitioner Validation		**85,57 %**

The table of the result of expert validation shows the average score of media expert validation is 95,83% and the average of material expert validation score is 97,57%, categorized as very good (Riduwan, 2010). All aspects of validation of the interactive multimedia courseware have met the validity score, according to the media and material experts. The average score of the practitioner validation is 85.57%, classified as "very good" (Riduwan, 2010). It means that according to practitioners, the interactive multimedia courseware developed is very good for use in learning.

Students' Response to the Use of Interactive Multimedia Courseware

To find out students' responses to the use of interactive multimedia courseware to strengthen character, the interactive multimedia courseware also tested on students as users. The results of the students' responses are illustrated in table 3.

Table 3. The Result of Student Response Questionnaire

	Items	Score (%)
1.	The interactive multimedia is better than the usual media used.	81,67%
2.	The interactive multimedia makes me more active in learning.	79,17%
3.	The interactive multimedia makes learning fun.	84,17%
4.	The interactive multimedia has clear instructions and easy to use	82,50%
5.	The interactive multimedia attracts my attention and motivation to learn.	85,83%
6.	The interactive multimedia helps me learn the material well.	85,00%
7.	The examples and illustrations contained in the interactive multimedia help me understand the material.	87,50%
8.	I can interact with the interactive multimedia well through the links and tools in it.	83,33%
9.	The interactive multimedia develops the values contained in the national historical event.	87,50%
10.	I understand the values contained in the national historical event through the interactive multimedia.	80,83%
11.	Learning with the interactive multimedia increases my sense of unity.	85,00%
12.	Learning with the interactive multimedia makes me more tolerant.	88,33%
13.	The material in the interactive multimedia makes me love the nation and the country more.	84,17%
14.	The material in the interactive multimedia makes me accept and respect differences better.	86,67%
15.	The interactive multimedia fosters my spirit of brotherhood.	81,67%
	Average Score	**84,22**

The table shows the average score of students' responses to the use of interactive multimedia courseware developed is 84.22%, classified as "very good" (Riduwan, 2010). This means that interactive multimedia is very good for use as a learning media for students. The interactive multimedia courseware developed makes learning more effective, such as making students more active and involved in learning. The students also like learning with interactive multimedia and learning becomes fun. interactive multimedia courseware also strengthens student characters such as the sense of unity, tolerance, love the nation and the country, accept and respect differences, and the spirit of brotherhood.

Discussion

The use of ICT-based media, especially multimedia has become a necessity in the learning process in today's digital era. This research produces IMONEC interactive multimedia courseware products which incorporate three important components: interactive multimedia learning principles; Bandura's observation learning models, and and the noble values and messages of national historical events to strengthen students' characters. This courseware contains a title, user instruction, home, core competency and basic competency, concept map of material, learning material, and quizzes.

Interactive multimedia courseware is reliable and suitable for use, based on study results. This can be seen from expert validation results showing an average score of 95.83 % (media expert validation) and 97.57 % (material expert validation), practitioner validation results showing an average score of 85.57%, and student responses showing an average score of 84.22 % from questionnaire results.

The results of media expert validation indicate that interactive multimedia courseware provides simple, interactive instructions for use, good quality of media display and the appropriate composition of colours. This combines the composition of multimedia content such as text , pictures, animation, video, and audio. The material and content order is appropriate and integrated. The choice of media content is appropriate and not overwhelming. Multimedia material and illustrations can help learners learn. The presence of multimedia links and resources enable students to communicate with the media and teaching learning.

The results of the material 's expert validation indicate that interactive multimedia courseware provides content which is compatible with the basic competency and student development. The media includes basic competency and indicators, as well as comprehensive content to promote competency attainment. The provided content reflects scientific reality, the latest trends and daily social life. Submission of content from basic lines of thought to more nuanced lines of thought within the coherent media. The media are structured with reasonable and correct language rules so that it encourages readability and connectivity.

Based on the results of the practitioners' questionnaire, interactive multimedia courseware has been able to draw students ' interest, 85.83% of students have said the use of interactive multimedia has attracted their interest and increased their enthusiasm for learning. This is relevant for the results of previous studies which state that the use of interactive multimedia courseware has a significant effect on increasing learning motivation (Wu & Tai, 2016).

Interactive multimedia that contains a variety of images, animation, video, and audio and colorful content create a fun learning experiences. According to practitioners and students, multimedia makes learning more fun. This supports research results which indicate that using interactive multimedia in learning provides a better learning experience with an attractive display of materials (Wiana et al., 2018). The use of interactive multimedia is a solution to the lack of student interest in learning dominated by lecture methods and the use of PowerPoint narrative media. PowerPoint textual slides appear to be passive, and less capable of properly transmitting the information. However, information quality is one critical dimension in e-learning systems (Alshehri et al., 2019).

The interactive multimedia courseware also makes it easier for the students to understand the materials. Through interactive multimedia, as many as 87.5% of students said they had an easier time to understand content. This is line with the findings of previous studies that the use of interactive multimedia helps students to better understand the material (Syawaludin et al., 2019b). The multimedia technology with its various advantages can bring events in various parts of the world into the classroom. The illustration in the multimedia through pictures, videos, sounds, and animations can make it easier for students to understand the material (Munir, 2012; Neo et al., 2008).

Interactive multimedia learning is based on the questionnaire and leads to a student-centred approach to learning. . It accommodates students' feedbacks with the availability of links and tools in it.. Students have control over learning, and if they do not understand well they may repeat some material. The results of previous studies on the use of interactive multimedia indicate that students agree and are interested in learning more (Gunawardhana & Palaniappan, 2016). Other research results also reveal that students are actively engaged in learning the material, analyzing and solving problems independently through interactive multimedia (Syawaludin et al., 2019b). In another study 93.5% of students agreed that interactive multimedia accommodated various learning styles and learning speeds for students (Leow & Neo, 2014). Thus, it is more flexible with diverse student learning speeds and will greatly help slower students in learning. Multimedia learning directs students to actively run multimedia and the teacher serves as a facilitator who helps the students to achieve the desired learning goals with the help of the interactive multimedia (Leow & Neo, 2014; Neo et al., 2008).

On the other hand, by adopting Bandura's learning principles of observing the model, the interactive multimedia courseware can also transform noble values that can strengthen students' characters. IMONEC interactive multimedia courseware integrates the values of national historical events contained in the Citizenship Education Curriculum. These noble values include the value of struggle, the love of the motherland, mutual cooperation, and the spirit of brotherhood, tolerance, collaboration, togetherness, unity and many others. Thus, it is not only a description of abstract

textual material, but it contains noble values and messages and the implementation of these values in daily life. Multimedia makes the abstract material more concrete (Sarac & Tarhan, 2017).

The material also contains noble messages from figures in national historical events that are very important to convey to students as the young generation of future national leaders. These noble messages include messages to maintain unity; respect among tribes, races, religions, and regions; prioritizing the interests of the nation over personal and group interests.

The noble values and messages contained in the national historical events are integrated into a variety of interactive multimedia content such as images, videos, animations. The results of Komalasari and Saripudin's research state that interactive multimedia that contains values will affect the characters of students (Komalasari & Saripudin, 2017). The students mention that they become more tolerant, love unity, the nation and country, respect differences, and have a spirit of brotherhood. Therefore, the interactive multimedia courseware that integrates the principles of multimedia learning, Bandura's observational learning model, and the national historical events can be used to strengthen students' characters.

Conclusion

This research and development resulted in an interactive multimedia learning courseware, called IMONEC that integrates three important components, namely the principles of interactive multimedia learning, the principles of Bandura's observational learning model, and national historical events into interactive multimedia courseware.

The results of the validation of the experts and practitioners state that the developed interactive multimedia courseware is very well classified. Most students have a positive reaction to using interactive multimedia courseware to reinforce character. This can be concluded that the developed interactive multimedia courseware has various advantages and is quite good to use as learning media in learning Civic Education, especially to strengthen students' characters. In this digital age, it is necessary to incorporate information and communication technology into learning, while at the same time strengthening students' character.

Suggestions

The development of information technology has provided various software facilities that can enable and facilitate interactive multimedia courseware development. Image processing software, such as Corel Draw and Adobe Photoshop, sound processing software, such as Adobe Audition, and the interactive multimedia and animation processing software, such as Macromedia Flash and Swish Max are available. Thus, the development of students' characters through digital media such as interactive multimedia needs to be carried out more. Interactive multimedia technology has many advantages in learning. National historical events contain noble values that can strengthen students' character. Future study needs to develop interactive multimedia courseware integrated with other national historical events and measure its effectiveness in strengthening student character.

Limitations

In this research, the operational field testing of the IMONEC courseware (Interactive Multimedia courseware with Bandura's Observational Learning Model and the National Historical Event to strengthen students' character) was limited to 30 students of the eighth grade. For more suggested studies we have to carry out tests on a broader scale in order to improve the effectiveness of IMONEC interactive multimedia courseware.

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