DEVELOPMENT OF SIGIL BASED E-BOOK AS MEDIA FOR "TECHNOLOGY AND INFORMATION FOR HISTORY LEARNING" COURSE

Ulfatun Nafi'ah & Indah Wahyu Puji Utami
History Department, Universitas Negeri Malang

ABSTRACT

Nowadays, information and communication technology has been accelerated. This condition also influence on the shift of students attitude toward knowledge and education. Therefore, teacher or lecturer must be creative to deal with this digital generation, for example by developing engaging media. This attempt become more and more important to do especially on history learning since many students considers this subject as dull and meaningless. This research tries to develop an engaging history learning media by using sigil software. The method used in this research is following Sadiman's model in media development which consist of several stages (1) identification of needs, (2) intention analysis, (3) content development (4) formulating of success measuring instrument, (5) media script writing, (6) validation, (7) revision, and (8) production . From the analysis, it can be inferred that the sigil based e-book with MindMaple content is valid. The percentage of media expert validation is 86%, media expert validation is 85% and small group trial is 96,25%. Therefore this media is feasible to use in the "Technology and Information for History Learning" course. The advantages of this e-book are low cost, easy to use, and engaging.

Keywords: history learning media, sigil, e-book, engaging

ABSTRAK

Perkembangan teknologi dan komunikasi telah mengalami akselerasi akhir-akhir ini. Kondisi ini juga berpengaruh terhadap perubahan sikap siswa atau mahasiswa mengenai pendidikan dan pengetahuan. Oleh karenanya, guru dan dosen harus kreatif dalam menghadapi generasi digital. Usaha ini penting untuk dilakukan mengingat pembelajaran sejarah seringkali dianggap membosankan dan tidak bermakna. Penelitian ini berusaha untk mengembangkan media pembelajaran sejarah yang menarik dengan menggunakan perangkat lunak sigil. Penelitian ini menggunakan model pengembangan dari Sadiman yang terdiri atas beberapa tahap (1) identifikasi kebutuhan, (2) analisis tujuan, (3) pengembangan materi, (4) penyusunan instrumen pengukur keberhasilan, (5) penulisan instrumen pengukur keberhasilan, (6) validasi, (7) revisi, dan (8) produksi. Berdasarkan analisis yang dilakukan dapat disimpulkan bahwa e-book berbasis sigil dengan materi MindMaple valid. Percentase dari ahli media adalah 86%, validasi ahli materi 85%, dan uji coba kelompok kecil 96,25%. Oleh karenanya media ini layak untuk digunakan dalam Matakuliah Teknologi Informasi untuk Pembelajaran Sejarah. Kelebihan dari e-book ini adalah murah, mudah digunakan, dan menarik.

Kata-kata kunci: media pembeajaran sejarah, sigil, e-book, menarik.

Author correspondence
Email: **ulfatun.nafi'ah.fis@um.ac.id**
Available online at http://journal.unnes.ac.id/nju/index.php/paramita

INTRODUCTION

Development of information, technology and communication has major influence on the students' development as well as their pattern of thinking in the knowledge gaining. Nowadays, students live in the digital era. They can be easily search needed information through digital media. They expect a learning environment which let them collaborate each other in a wider network (Pletka, 2007). Digital generation feel not satisfy with conventional education (Garrison and Vaughan, 2008: ix). Therefore, teacher must be up to date with their students' characteristic as digital generation. Teachers must be creative to develop various interactive learning media by using the current information and communication technology to facilitate their students learning.

However, learning is not about accomplishment or intention, yet, it is a process to accomplish that intention (Hamalik, 2011:29). Media will help student as learner to accomplish the intention of learning. For example, the intention of history learning are to embrace students with their nation identity and character which led to the development of sense of pride and sense of obligation to their nation state (Kartodirjo, 1997). Therefore, history leaning must be evolve and innovate by transforming from conventional and bored learning to a joyful and engaging learning.

Those joyful and engaging history learning could be accomplished by using technology, especially information and communication technology in digital learning. By digital learning, students could reconstruct their own knowledge through a meaningful process. Those situation in line with constructivism theory in education as proposed by Shymasky (1992) who states that learning is active activity where students construct their own knowledge, search their own meaning of what they have learned, and process of finishing new concepts and ideas with their own previous frame of thinking. Therefore, a meaningful learning is needed.

A meaningful learning in history won't be just a dream if teacher could provide various alternatives of media and learning sources such as textbooks or digital based media. Textbook plays important role in history education. Kochar (2008:161) states that textbook is an important among other learning sources, even though it is not the only learning source in history. Therefore, it is important to develop various innovative and engaging media in history learning.

Innovative and engaging media on history learning become more and more important to be developed in digital era since the infamous image of history learning itself. Capra (1998:13) stated that history is a dull subject which slowly responds to a change. The lack of creative and innovative ideas on history learning contributes to the infamous image of history learning. So, it is important for a history teacher to be creative and innovative on teaching and learning. An engaging media is important to develop a meaningful learning for students (Prastowo, 2011:18).

As a prospective teacher, a history education student on higher education should prepare his/herself with many creative and innovative ideas on teaching and learning history, especially by using digital media. Therefore, History Department on State University of Malang prepares its student with various skills including developing creative and innovative digital based history learning media through Technology and Information for History Learning course.

Most of our students who take that course were digitally literate. So, they can use computer or gadget to access the Internet. This condition is an advantage for learning at that course. However, there are limited learning source available on the neither university nor faculty library for that course so students tend to use information from the Internet carelessly. They use that information without any verification nor clarification. Sometime, they also write without clearly mention their source which could led to plagiarism.

Those problems could be minimized by developing a textbook for that course. Since the students were digitally literate, it will be easier for them to use digital based media such as e-book. They will be able to open and read that e-book by using their own computer, laptop, or gadget. Students will be easily learned about the Technology and Information for History Learning course by themselves with e-book.

E-book is digital based technology integrating texts, graphics, audio, animation and even video or movie (Putra, 2014). It is more engaging and interactive than conventional textbook. By using e-book, students' reading habit could be improved. They don't have to bring thick and heavy book. In contrary, they can simply download the e-book and read it anywhere and anytime. They will be more interested with that interactive digital book.

A software is needed to develop such interactive e-book, for example sigil. Sigil is an open source and free content editor for *epub* format. It has many features and designed to be easily used to cre-

ate e-book. It is also able to edit *epub* (file and convert to the other format. It is can be run in multiplatform such as windows, mac, and linux.

Based from pervious background, this article aims to study the development of sigil based e-book as media for "Technology and Information for History Learning" course.

RESEARCH METHOD

This research conducted through a development model by Sadiman (2010:101) since it is suitable to the development of intended e-book. It is also clear and easy to practice. There are several stages on Sadiman's development model: (1) identification of needs, (2) intention analysis, (3) content development (4) formulating of success measuring instrument, (5) media script writing, (6) validation, (7) revision, and (8) production (see figure 1).

Data were collected by questionnaire which could be divided into three types, for expert on media, expert on matter, and our students as prospective users. Those data consist of quantitative and
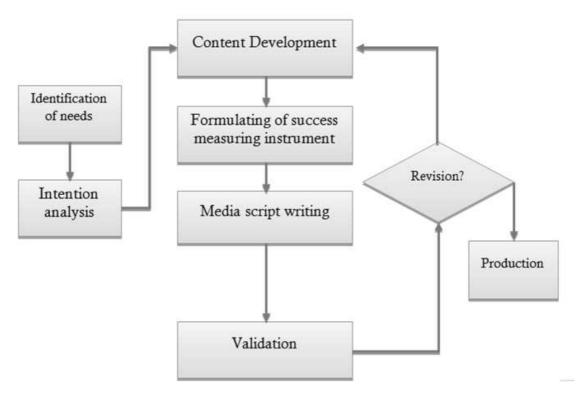

Figure 1. Model of Media Development (adopted from Sadiman, 2010)

Table 1. Validity Percentage

Percentage	Criteria	Note
81,26 – 100	Valid	No Revision
62,51 – 81,25	Quite Valid	Minor Revision
43,76 – 62,50	Less Valid	Partial Revision
25,00 – 43,75	Not Valid	Major Revision

qualitative data which will be analyzed by percentage. The sigil based e-book for "Technology and Information for History Learning" course will be consider as valid and could be used as learning media if it is reaching the minimal criteria of validity (see table 1).

RESULT AND DISCUSSION

The findings of this research could be describes as follows. The subject matter developed in this research based on the competency that student can apply their knowledge on computer and internet for the sake of history learning and history education research. A specific matter developed in this research is Mind Mapping with MindMaple application for history learning media.

Appearance of Text

Visualization of subject matter on this digital book or e-book in form of text could be divided into two parts. The first text is about the MindMaple application while the second one about the tutorial to create history learning media using MindMaple application as seen as follows (see figure 2).

This e-book could be read and learn by our students anywhere and anytime as they need it. But, in order to do that, our student must install Readium, a google chrome plug in, on their computer or laptop which is free and very easy to do. If they want to read it on their android based gadget, e.g. smartphone or tablet, they just need to install Ideal Reader, a free EPUB reader application, from Google Playstore.

Appearance of Graphic and Figure

Graphics and figures are necessary in e-book to clarify and support the idea of the text, particularly the abstract conceptual or ideas. Appearance of graphics and figures in the text should be corresponding or appropriate with the content of the text as seen as follows (see figure 3).

Appearance of MindMaple Tutorial

MindMaple tutorial is important part of the e-book designed in this research. The tutorial is intended to guide our students
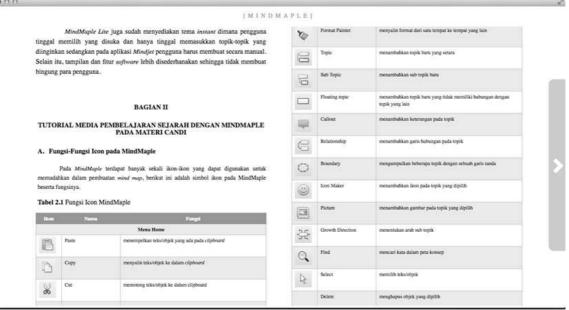

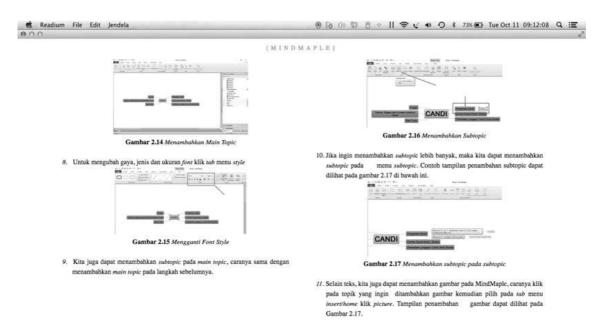Figure 2. Text Appearance on Sigil Based E-book
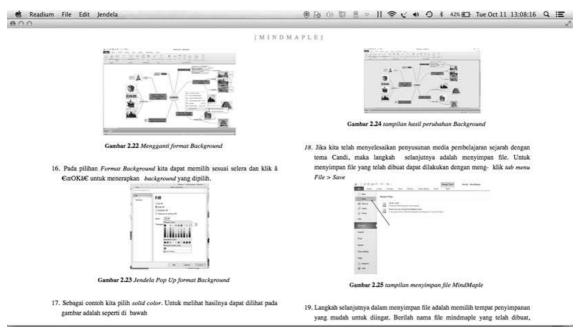
Figure 3. Graphics Appearance in Sigil Based E-book

Figure 4. MindMaple Tutorial

to create their own mind map with this application step by step. Every step was supported with print screen figures as if the user access and create his/her own application. Therefore, it will be easy for them to develop and create a wonderful and engaging mind map as history learning media using MindMaple application. The tutorial appearance could be seen as follows (see figure 4).

Appearance of Test or Evaluation
The e-book developed in this research were equipped with several test to evaluate students understanding of MindMaple application. For example of the test see figure 5.

Figure 5. Appearance of Test

Analysis of Data Validation by Media Expert

Our sigil based e-book were validated by Gres Dyah Kusuma ningrum, M.Pd., learning media expert from Faculty of Engineering State University of Malang. Based on validation conducted by media expert, it could be inferred that our sigil based e-book is valid. There are several items to be validated by media expert such as effectivity (87,5%), accuracy (87,5%), easiness (83,3%), clarity (85%), engaging and motivation (75%), comprehensiveness (91,67%), compatibility (100%). The overall average analysis by media expert is 86%. Therefore, it is considered to be valid and does not need any revision. For illustration see figure 6.
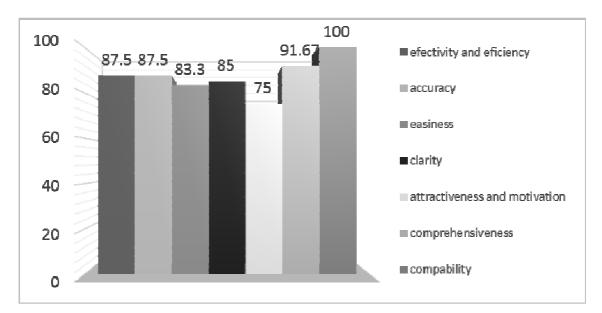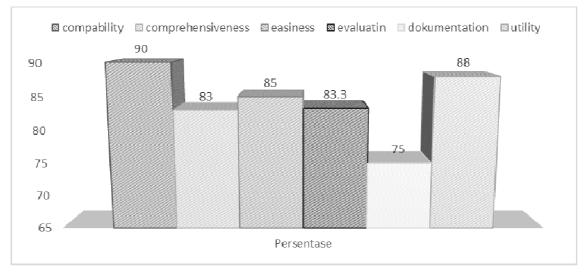

Figure 6. Media Expert Validation (source: media expert validation instrument)

Figure 7. Content Expert Validation (source: content expert validation instrument)
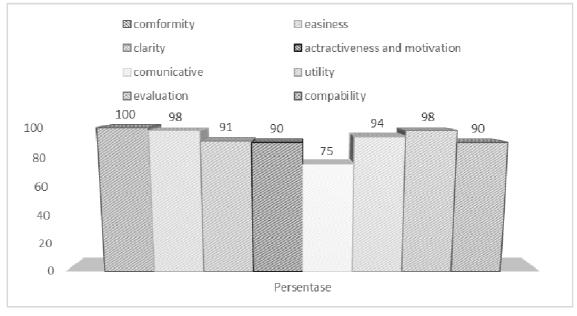

Figure 8. Small Group Trial (source: content expert validation instrument)

Analysis of Data Validation by Content Expert

Content expert validation is necessary to make sure that our sigil based e-book is valid and can be used on learning process. Content expert in this research is Dila Umnia Soraya, M.Pd. from Informatics Engineering program on Faculty of Engineering State University of Malang. Based on her validation, it ca be inferred that our e-book is valid. There are several items to be validated by content expert such as appropriateness (90%), comprehensiveness (83%), easiness (85%), evaluation (83,3%), documentation (75%), utility (88%). The overall average analysis by content expert is 84,07%. Therefore, it is considered to be valid and does not need any revision. For illustration see figure 7.

Analysis of Small Group Trial

After our sigil based e-book consider as valid by media and content expert, we conduct a small group trial which involves 5 students who take the "Technology and Information for History Learning" course. The result could be seen as follows (see figure 8).
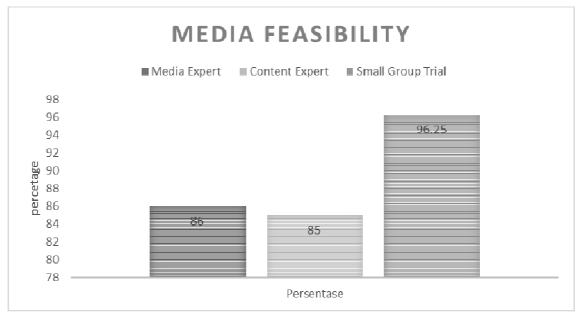
Figure 9. Media Feasibility (source: media expert, content expert, and small group trial)

The overall average is 96,25% so that the e -book developed in this research considered to be valid and doesn't need any revision.

Based on the validation by media and content expert as well as small group trial, it can be inferred that the sigil based e-book developed in this research is valid and feasible to use in the "Technology and Information for History Learning" course. For further illustration see figure 9.

Discussion of Validated Product
The product that produced in this research is history learning media in form of sigil based e-book for "Technology and Information for History Learning" course. Those e-book were designed, created, and validated by experts and students as prospective users.

The use of e-book on higher education cannot be avoided. Nelson (2008) argues that higher education is expected to be at the forefront of the wave of e-book adoption. By e-book we mean not only a .pdf format of print book, but also contain video and tutorial.

The content developed in this e-book is MindMaple which is hoped that it will be abounding students' creativity in developing various learning innovation, particularly on history learning media.

Munir (2012:29) argues that multimedia, including e-book, ability to increase students' creativity is already tested since it has interactivity factor. Atno (2011) stated that an engaging and interactive media could increase students' motivation. Sigil based e-book is a kind of interactive media which provide many experience for students. It is not a conventional textbook. It is also equipped with video and tutorial to make an engaging history media. Therefore, students will be easy to learn about it and develop their own engaging and interactive media for history learning.

Tanjung (2015:265) argues that students' learning outcomes that use textbook is lower than those who use what she consider as by utility media. However, that fact doesn't mean that textbook is not important in history education. An interactive and engaging textbook could be produce by an educator. If a teacher or lecturer produce his or her own textbook or media, it will be more contextual since he or she can adjusts with the condition that he or she faces or the class. Sigil based ebook that we produced proved to be feasible to use in our course.

The advantage of sigil based e-book is the ability to combine texts and graphics into an interactive and engaging book. That e-book is easy to use and read on the

computer, laptop, smartphone or other gadgets. It can be an alternative media to learn about the application of information and communication technology to create an engaging and wonderful history learning media.

The other advantages of our sigil based e-book are described as follows. (1) Users can access our sigil based e-book offline. They just need to copy or download the e-book file in the *epub* format. The file can be opened either Radium application on computer or laptop. It also can be opened with Ideal Reader application on android gadgets; (2) Our sigil base e-book is equipped by several contents such as text (in doc and pdf format), graphics, and animations; (3) The appearance of our sigil based e-book is more engaging than conventional textbook; (4) Sigil is free and open access software. This application is used in the development of our e-book so it is low cost; (5) Our sigil based e-book could be used by our students as reference that can be use outside and inside the class. It will support the face to face learning. Our student can learn autonomously without any lecturer guidance by using our e-book. They can also try to create their own mind map using MindMaple application since our e-book provides the tutorial to do it.

CONCLUSION
Sigil based e-book developed for "Technology and Information for History Learning" course in research considered to be valid. It is an engaging book that will help our students to create another engaging and wonderful history media by using MindMaple application. This e-book has many advantages such as low cost, engaging, abound students' creativity, etc.

For further development, there are several important things to be noted. First, despite the fact that our sigil based e-book can be used by students autonomously, it can't eliminate the lecturer function on the learning. Face to face learning is needed to build a good character and relationship between students and lectures. Second, to get better and optimal features, students

should use computer or laptop instead of smartphone. Third, please make sure that the device storage is capable to save the file weather on computer, laptop, tablet, or smartphone. Fourth, this media can be further develop by add more history content. It also can be equipped with video to make it more engaging. Fifth, it is hoped that this e-book will inspire students to create their own engaging and wonderful history learning media so that history learning will be more interesting and meaningful.

REFERENCE
Akbar, S. 2013. *Instrumen Perangkat Pembelajaran*. Bandung: PT Remaja Rosdakarya.
Atno. 2011. "Efektivitas Media CD Interaktif dan Media VCD terhadap Hasil Belajar Sejarah Siswa SMA Negeri di Banjarnegara Ditinjau dari Tingkat Motivasi Belajar." *Paramita: Historical Studies Journal*, 21 (2), p. 213-225.
Capra, F. 1998. *Titik Balik Peradaban*. Yogyakarta: Penerbit Bentang Budaya.
Garrison, D.R, and Vaughan, N.D. 2008. *Blended Learning in Higher Education: Frameworks, Principles, and Guidelines*. San Francisco: Josey-Bass.
Kartodirjo, S. 1997. *Kebudayaan Pembangunan dalam Persepektif Sejarah. Kumpulan Karangan*. Yogyakarta: Gadjah Mada University Press.
Kochar, S.K. 2008. *Pembelajaran Sejarah*. Jakarta: Grasindo
Hamalik, O. 2011. *Strategi Belajar Mengajar*. Bandung: Mandar Maju.
Munir. 2012. *Multimedia: Konsep & Aplikasi dalam Pendidikan*. Bandung: Alfabeta.
Nelson, M.R. 2008. "E-Books in Higher Education: Nearing the End of the Era of Hype?" *Educause Review*, 43 (2), p. 40-56.
Pletka, B. 2007. *Educating the Net Generations: How to Engaged Students in the 21st Century*. Santa Monica Press.
Prastowo, A. 2011. *Panduan Kreatif Membuat Bahan Ajar Inovatif: Menciptakan Metode Pembelajaran yang Menarik dan Menyenangkan*. Jogjakarta: Diva Press.
Putra, P.B. 2014. *E-book dan Pasar Perbukuan Kini*. Retrieved March 1, 2016 from http://www.ristek.go.id.
Sadiman, A. 2010. *Media Pembelajaran: Pengertian, Pengembangan, dan Pemanfaa-*

tan. Jakarta: PT Raja Grafindo Persada.

Shymansky, J. 1992. "Using Cosntructivist Ideas to Teach Science Teachers about Constructivist Ideas, or Teachers are Students Too." *Journal of Science Teacher Education,* 3 (2), p. 53-57.

Tanjung, S. 2015. "Pengaruh Media Pembelajaran dan Gaya Kognitif terhadap Hasil Belajar Sejarah." *Paramita: Historical Studies Journal*, 25 (2), p. 261-271.