The Development of E-Module for Batik Local Content in Pekalongan Elementary School

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Article Info	Abstract
	The teaching materials are to help the teachers in conducting learning activities in the classroom. The materials are written and unwritten. This study purposed to analyze the teaching material using e-module as local content Batik, develop e-module local content Batik that is practically and effectiveness in improving the local content learning for elementary school in Pekalongan, analyze the validity test of Batik's e-module is to measure the learning of local content for elementary school in Pekalongan, the effectiveness of Batik's e-module can enhance the learning of local content for elementary school in Pekalongan. This study uses research and development models (R&D). The development of teaching material in this study is Batik's e-module. The teaching material provides Figures and videos about Batik, so it will be easily for students in understanding the material. The result of the feasibility material by the experts have obtained the percentage 88.6%. Then, the result of media validation is 97.14%. Based on the results validation show that the developing e-module is in the excellent categories, so it has been feasible to be applied in the learning process. The effectiveness tests are conducted in three requirements, there are analyzing the minimum completeness test, individual classical completeness test, and improved learning outcomes. The results of three requirements test, show that Batik's e-module could improve the students learning outcomes significantly compared to the learning by using the published book. This study is supported in education, to develop Batik's e-module. The product becomes an alternative media to assist the students learn Batik by using technology. It can also use as a source of reading in the learning of local content.

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INTRODUCTION

The local content is given as a framework for the introduction of understanding and devolution of the regional characteristics of the learners. The local content position in the curriculum is not a stand-alone subject, but it is an integrated subject that is part of the subject before.

Through the local product has been implemented in schools. The students are expected to increase their interest in regional culture and to embed cultural values that surround learners. One of Indonesian culture is *Batik.*

Batik has been presented in Indonesia. Consciously or not, this tradition has become an integral part of human life in Indonesia (Ciptandi, 2016). *Batik* is not only Indonesian cultural heritage, but it is also used as a symbol of the fashion community in Indonesia (Sari, 2018). The culture of *Batik* should not be lost, so it should be learned by drawing the design (Alfiana, 2017). In other words, *Batik* has become a part of education in Indonesia that includes history and process in the making of *Batik* incorporated into the material to study art and culture in school (Pramitasari, 2015).

Nowadays, the process of learning *Batik* use the manual way with book and visiting *Batik* gallery. The technology has been growing, students will prefer to play gadgets rather than reading the book and visiting *Batik* gallery. In terms of time, students are required long enough to learn *Batik* (Nurainun, 2008). While the teaching materials use the books that are provided by the school as references to learn *Batik*, but the book has not yet to appropriate the curriculum 2013. Therefore, the books in the school are limited, so the student cannot learn from the book previously at home.

The teaching materials are one of the successful learning process (Lamb & Annetta, 2013). There are several types of teaching materials, namely printed teaching materials, audio visual materials and tools that are manipulating. Teaching materials are systematic, it arranges to facilitate students for learning easily. One of the sources of the teaching materials that can be used namely module (Prastowo, 2013).

The module is a systematic and compelling in structured the teaching material that includes the content, methods, and evaluations that can be used independently (Pambudhi, 2017). By using a module, students can study independently without or with teacher guidance, controlling the learning outcomes through the use of competency standards in each module that students must achieve, and they become more accountable responsible for their actions (Setyowati, 2013). In other hands, the module is a teaching material that is arranged by educators or teachers, so learning local content of *Batik* use module for integrating between local materials with local potentials around the school environment will get an opportunity to Implement as well (Sasmita, 2018).

Integrating technology in education is especially concerned with learning to bring a new revolution and providing a chance to achieve high understanding and learning outcomes (Sujanem, Suwindra, & Tika, 2009). The research conducted by Zulvianda, Hanum, & Nazar (2013) expressed that the use of e-module can add the students' learning interest because it provides interactive materials. Various components of electronic module are presented online (text and images, video, simulation, and feedback questions) considered effective by students as learning experiences (Suarsana & Mahayukti, 2017) and (Arsyad, 2011).

Based on the research conducted by Atmaji (2018) stated that the use of e-module is proper to use in the learning for elementary school. The research conducted by Kuncahyono (2018) stated that the development of e-module is proper to use in thematic learning in elementary school.

The previous research revealed that the development of e-module in elementary school needed to implement. From the results of previous research studies, the development of e-modules has not yet reach the stage of the students cognitive and psychomotor in elementary school. Based on the study above, it is necessary to research and to develop e-module of

local content of *Batik* to improve the learning outcomes and skills of the students. This research purposed to (1) analyze the teaching material using *Batik*'s e-module as local content, (2) develop *Batik's* e-module that is practically and effectiveness in improving the local content learning for elementary school in Pekalongan, (3) analyze the validity test of *Batik's* e-module is to measure the learning of local content for elementary school in Pekalongan, (4) the effectiveness of *Batik's* e-module can enhance the learning of local content for elementary school in Pekalongan. The benefits of this research is development of *Batik's* e-module as product of local content that is flesksibel, efficient and effective. The prodcuct can be used as a source of reading that is able to provide understanding of *Batik's* stamp material.

METHODS

Type of research study was research and development (Borg & Gall, 2003). The E-Module development model of this research was the research model of *ADDIE* (Analysis, Design, Development, Implementation, and Evaluation) (Branch, 2009).

In accordance with the curriculum 2013, local content batik stamp material was taught in fifth grade. Hence, the subject of this research was fifth grade students of elementary School in Klego 01 2018/2019. The trial subjects were 31 students in experimental classes and 31 students in the control class. The data in this study was collected using interviews, polls and test. The data analysis technique of this research was conducted by analyzing the interview and sharing questionnaire data, while the test was analyzed using the t-independent test.

RESULTS AND DISCUSSION

Analysis

Need Analysis of teaching materials was done in several elementary schools of Pekalongan, such State Elementary of Duwet, State Elementary of Tirto 03, State Elementary of Keputran 6 and State Elementary of Klego 01.
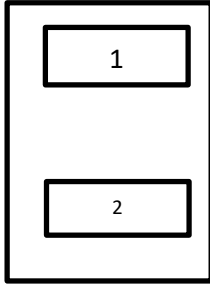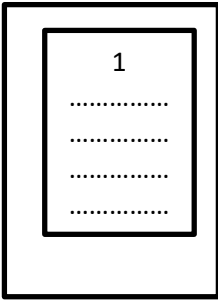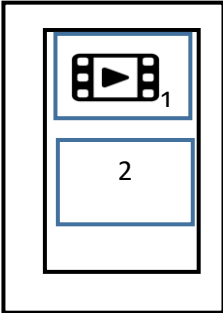
The result showed that the teaching materials used during this time was from book's publisher. According to elementary school teachers' interview, the lack of innovation on presentating materials made students becoming less passionate in the learning of *batik*.

Based on preliminary findings, this study developed a fun teaching materials that suitable for students there. Through developing module, could solve the problems or difficulties within learning.

Design

The next stage was designing the e-module. This design could be seen in table 1.

Table 1. Design of E-module for local content batik

Figures	Descriptions
	Descripitons 1= Title E-Module of Local Content Batik 2=authors/developers E-Module local content batik
	Descriptions 1= Materials in E-module of Batik Local Content
	Descriptions 1= Video display on e-module local content batik 2= Material descriptions of learning videos on e-module content
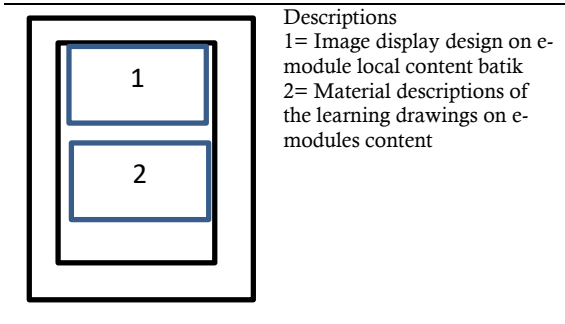
Descriptions
1= Image display design on e-module local content batik
2= Material descriptions of the learning drawings on e-modules content

Development

Result of this product appeared in *3D Pageflip professional,* by applying *3D software Pageflip Professiona l*. Sound supported the product in order to make it more attractive and understandable. As, people opened each page, would sound like opening a book by hand.

The design of e-modules accorded to the needs analysis. The cover reflected to local batik content, as in Table 1 analysis gave an overview that the e-module would be developed properly. For learners, this electronics module became a module companion on the subject of local content aspects in elementary school. Hence, the display of the E-module covered local batik content as in Figure 1.
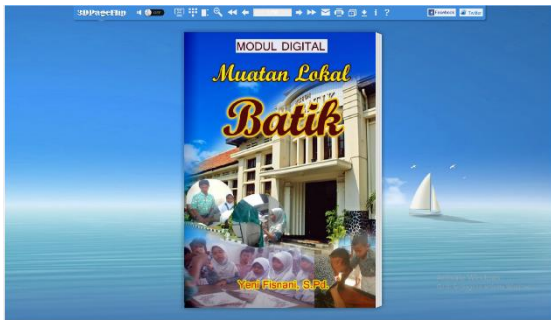

Figure 1. Initial View of E-module

The materials outlined in the E-module complied with the competency of fifth elementary class of Indonesia's curriculum of 2013. The materials comprised variety of *batik*, identifying the variety of batik *cap* (stamp), techniques and terms of batik coloring, expressing and explore the ability of the batik stamp variety. The display of local batik content of e-module was in Figure 2.
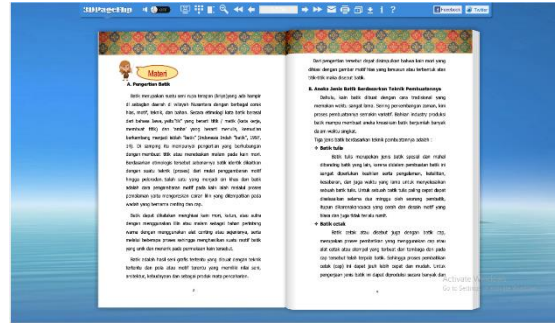

Figure 2. Display of Local Content Batik E-Modules

There was a video learning showed the e-module. The videos eventually related to batik materials and could be seen in Figure 3.
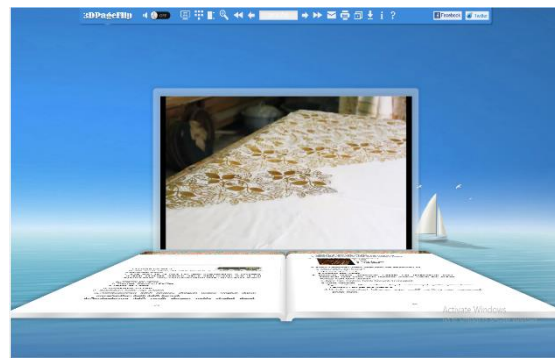

Figure 3. Display of Video E-Modul Local Content Batik

Somehow, all Figures covered everything about *batik* as local content. It aimed to the students get a stimulus about knowledge of *batik*. Image display on the e-module of local batik content could be seen in the Figure 4.

Figure 4. Display of E-Module Images of Local Content of Batik

The table 2 was validation result done, as the procedure of the research.

Table 2. Validation Result of Media Expert E-Module Local Content Batik

Stages	Media	Categories
1	60	Adequate
2	88.6	Excellent

Material validator of stage 1, achieved 42 with a maximum score of and the average validator value acquired from the whole aspect was 60%. This result was as adequate category. Next, the material validation in stage 2, gained score 62 and then the percentage 88.6% as excellent categoriey. While, the validation on the media experts could be seen in table 3.

Table 3. Validation result of Material expert

Stages	Material	Categories
1	62.8	Adequate
2	97.14	Excellent

The validation result of media experts at stage 1 obtained score of 44. That should be as, $\frac{44}{70} x 100\% = 62,8\%$, with adequate cateogory. While, stage 2 got score 68, with maximum score of 70. Then the presented as $\frac{68}{70} x 100\% = 97,14\%$. Based on these calculations, the media validation resulted 97.14% with excellent categories.

Implementation

To determine the effectiveness of e-module *batik* local content, devided 31 students as an experimental class and 31 students as a control class taught using the publisher's book. Table 4 and 5 described both pretest and postest student learning results descripstive.

According to table 4, the lowest value of the experiment class *pretests* 25, meanwhile the lowest value control class was 40. The highest value on the experiment class and the control class resulted 100. The average value in the experiment class resulted 54.2, and the average value control class was 59.2.

Table 4. Results of a Descriptive Analysis of Student *Pretests* Results

	The number of students	Average	the lowest score	the highest score
Pre-test experiment	31	54.2	25	100
Pre-test control	31	59.2	40	100

Table 5. The Result of *Postest* Students Descriptive Analysis

	The number of students	Average	The lowest score	The highest score
Post-test eksperimen	31	85.8	75	100
Post-test kontrol	31	72.1	45	100

Based on table 5, the average student learning *postest* experimental class resulted 85.8, and *postest* average value control class resulted 72.1. The lowest value in the experiment class was 75 and the lowest value in the control class was 45.

The analysis of effectiveness tests was through three prerequisitest, comprised average tests, classical-proof tests, and improved tests. First analyzewas the effectiveness of local content e-modules by testing the average of each class. The average test used *one sample t-test*. The average student test result in each class could be seen in the table 6.

Table 6. Average test results

Class	t	df	sig	Mean diference
Experiment	42.704	30	0.000	85.806
Control	35.958	30	0.000	72.096

According to Tabel 6, the result showed the value of sig. in the experimental class $0,000 \leq 0,05$, and in the control class with the sig. value was $0,000 \leq 0,05$. These indicated that the average value of students in each class that taught using the local content e-module and the publisher's book have reached a minimum completeness grade (KKM 70).

The next test was the classical survival test of each class. This test determined each student of submission within achieving a standard score. Score $Z_{0.5} - \alpha$ calculated by $Z_{0.05} - \alpha = Z_{0.45} = 1.64$.

In the experimental class Z_{value} reached 3.21, where it is larger than $Z_{table} = 1.64$. So H_0 was rejected. While, in the control class Z_{value} was 0.31 smaller than $Z_{table} = 1.64$. So, H_0 was accepted. Thus, implementation of local content e-modules was able to improve student learning outcomes by 75% presentation. Meanwhile, the control class could not achieve learning outcomes with presentation 75%.

The following test was improving overall learning outcomes. Test used *independent sample t-test* and based on the *independent sample t-test* in column *Equal variances assumed* through SPSS 24.0 with a 5% level gained that the student learning data taught using a local e-module of batik with the students taught using the publisher books . It obtained a significance level 0.000 < 0.05 then H_0 was rejected. Hence, the student learning data taught using the E-module of local batik content with the students taught using the publisher book significantly difference.

Evaluation

After the process from the previous stages, the development of e-module got some improvement to be done. Some advice from teachers (practitioners) could be seen in table 7.

Table 7. Teacher's Suggestion On E-Module Local Content Batik

Teachers Suggestion
Glossary on e-module local content batik needed to be added
The language used needs to be shortened to make it easier to be understood.
There were still a few sentences that were multiple words.

Based on table 7, the e-modules batik obviously needed several revisions. The content of batik e-modules for elementary school to be more concerned in the preparation of language and sentences, and the addition of glossary of terms used in e-module local content batik.

In the development of this electronic module, the analysis of potential and problems in elementary school in Pekalongan, especially local content subjects was conducted. These problems and potential among others, such the implementation of curriculum 2013, and teaching aspects of the art of material was only the introduction of the motif batik *cap* (stamp) and should be applied the motif being *batik*'s works.

Designing E-modules should be practical, simple, language understandable, applicative, and accompanied by examples, and support of interesting illustrations (Sudarwati, 2013). E-modules needed to assist schools in realizing quality learning an provide more well-planned learning activities (Islami & Asiatun, 2012).

Eligibility of e-module could be seen from the validation results of media experts, materials and practitioners (Prastuti, 2018). Material validation finished in two stages. First stage noticed that the E-module did not use it as learning resource yet. While, a revision stage aimed to improve the productivity of e-module local batik content to be better. On the feasibility validation done by two stages. The result obtained e-module local content batik reached the maximum score, with the category was excellent. So, it was feasiblely learning. An interesting e-module presentation could increase learning students' desire. This indicated that learning through interactivemedia and appropriate learning models could improve student learning performance (Purwahida, 2018).

Implementation product was the next step of the development .Implementation was done by 31 students. Measurement of effectiveness data used test instrument, by evaluation given to students after using the E-module local batik content (Karimatussalamah, 2018). As a prerequisite *t-independent* test data student learning results should be distributed normally (Kim, 2015).

The effectiveness test done with three prerequisites, namely the minimum test of the mean, the classical individual test of each class and the improvement test of learning outcomes (Gerald, 2018). The three prerequisites of the test demonstrated that the learning using the e-modules of local content of batik could improve the students' learning outcomes significantly, than using the book Publisher.

CONCLUSION

The characteristics of teaching materials needed by students, were adequate in teaching materials. It made them not bored and stimulated students to make understand *batik* stamp material. These problems were caused by teaching materials used was a book's publishers. The book gave less understanding of batik stamp material on students for students. Development of teaching materials became e-module of local content batik. E-module local content batik presented material being more interesting, both Figures and videos about batik. The results of the feasibility test from the material member scores and the percentage was 88.6% with excellent categories. The result of presentage of media validation was 97,14%. Based on the results of material and media validation, showed that the development of e-modules were on the excellent criteria. So, it deserved to be applied in learning. The effectiveness test was within three prerequisites, namely the minimum test of the mean, the classical individual test of each class and the improvement test of learning outcomes. The three prerequisites of the test demonstrated that the learning using the e-modules of local content of batik could improve the students' learning outcomes significantly compared to the study conducted using the book publisher.

REFERENCES

Alfiana, Rizk., Djariyo & Artharina, Filia Prima. 2017. Analisis Kegiatan Ekstrakurikuler Membatik Terhadap Kemampuan Membatik Seni Rupa Siswa Sekolah Dasar Di Desa Mantingan, Kecamatan Jaken, Kabupaten Pati. *Jurnal Refleksi Edukatika* 8 (1)

Azhar Arsyad. 2011. Media Pembelajaran. Jakarta: Rajawali Press.

Atmaji, Rizan Dwi & Maryani, Ika. 2018. Pengembangan E-Modul Berbasis Literasi Sains Materi Organ Gerak Hewan Dan Manusia Kelas V SD. Fundamental Pendidikan Dasar. Vol. 1 No. 1.

Borg, R Walter dan Gall D. Meredith. 2003. Educational Research. Longman, New York.

Branch, Robert Maribe. 2009. Instructional Design. The ADDIE Aprooach. Springer.

Ciptandi, Sachari, Haldani, dan Sunarya. 2016. Inventory on Motif of Traditional Batik Tulis Tenun Gedhog of Kerek Community, Tuban Sub District, East Java. Multidisciplinary design: Harmonizing design in today's society, technology and business. Hal. 439-445, .

Gerald, Banda. 2018. A Brief Review of Independent, Dependent and One Sample t-test. International Journal of Applied Mathematics and Theoretical Physics; 4(2): 50-54

Karimatussalamah, Sitti. 2018. Pengembangan Modul IPA Untuk Materi Mendeskripsikan Struktur Bumi Siswa Kelas V. Jurnal Universitas Nusantara.

Kim, Tae Kyun. 2015. T Test As A Parametric Statistic. Korean Journal of Anesthesiology. 68(6): 540-546. 546 http://dx.doi.org/10.4097/kjae.2015.68.6.540

Lamb, R. L., & Annetta, L. (2013). The Use of Online Modules and the Effect on Student Outcomes in a High School Chemistry Class. Journal of Science Education and Technology, 22(5), 603–613. https://doi.org/10.1007/s10956-012-9417-5

Nurainun, Heriyana, dan Rasyimah. 2008. Analisis Industri Batik Di Indonesia. Jurnal Fokus Ekonomi (FE), Vol.7, No. 3

Islami, Erika Nuzulia Al & Asiatun, Kapti. 2018. Pengembangan Modul Pembelajaran Muatan Lokal Membatik Di SD Piyungan. Jurnal Pendidikan Teknik Busana.

Pambudhi, Tegar., Retnowati, Trie Hartitit. 2017. Pengembangan Modul Pembelajaran Tematik Integratif Berkarakter Nasionalisme Kelas Iv Sekolah Dasar Daerah Banyumas. Jurnal Pendidikan Karakter. No. 1

Pramitasari, Afrinar., Aulia, Hanindya Restu., Widadi, Zahir. Pengembangan Buku Pop-up Pekalongan sebagai Media Edumotik (Edukasi dan Promosi Batik) Kota Pekalongan. Jurnal Litbang Kota Pekalongan. Vol.8

Prastowo, Andi. 2013. Panduan Kreatif Membuat Bahan Ajar Inovatif. Yogyakarta: Diva Press

Prastuti, Adwidya., dan Naqiyah, Najlatun. 2018. Pengembangan Modul Pengenalan Karier Bagi Siswa Kelas 4 Di Sekolah Dasar Negeri Wiyung 1 Surabaya. Jurnal Bimbingan Konseling UNESA.

Purwahida, Rahma. 2018. Problematika Pengembangan Modul Pembelajaran Baca Tulis Anak Usia Sekolah Dasar. AKSIS Jurnal Pendidikan Bahasa dan Sastra Indonesia.

Sari, Rina Nufita & Gunansyah, Ganes. Batik Gedhog Desa Kedungrejo-Tuban Sebagai Sumber

Belajar Berbasis Etnopedagogi Di Sekolah Dasar. JPGSD Volume 06 Nomor 10.

Sasmita, Amara & Fajriyah, Khusnul. 2018. Pengembangan Modul Berbasis Quantum Learning Tema Ekosistem Untuk Kelas V Sekolah Dasar. Jurnal Refleksi Edukatika 8 (2)

Setioningtyas, Widhayani Puri., Murtadho, Ali Mahrus., Jannah, Miftachul., Iga Sukmawati. Peningkatan Ide Dan Kreatifitas Siswa SD Melalui Kreasi Batik Jumputan. Penamas Adi Buana. Volume 2, Nomor 2.

Setyowati, R., Parmin, dan A. Widiyatmoko. 2013. Pengembangan Modul IPA Berkarakter Peduli Lingkungan Tema Polusi sebagai Bahan Ajar. Unnes Science Education Journal. 2(2)

Suarsana, I. M., & Mahayukti. (2017). Pengembangan E-Modul Berorientasi Pemecahan Masalah Untuk Meningkatkan Keterampilan Berpikir Kritis Mahasiswa. JPI (Jurnal Pendidikan Indonesia), 2(2), 193–200. https://doi.org/10.23887/jpi-undiksha.v2i2.2171

Sujanem, R., Suwindra, I. N. P., & Tika, I. K. T. (2009). Pengembangan Modul Fisika Kontekstual Interaktif Berbasis Web. Jurnal Pendidikan Dan Pengajaran, 42(2), 97–104. https://doi.org/10.23887/JPPUNDIKSHA.V42I2 JUL.1743

Zulvianda, H., Hanum, L., & Nazar, M. (2013). Pengembangan e-modul berbasis model pembelajaran discovery learning pada mata pelajaran " sistem komputer " untuk siswa pengembangan e-modul berbasis model pembelajaran discovery learning pada mata pelajaran " sistem komputer " untuk siswa kelas x multime. Jurnal Ilmiah Mahasiswa Pendidikan Kimia, 1(January), 223–230. https://doi.org/10.23887/jptk.v14i1.9880