Developing an Electronic Module of Local Wisdom Based on the Area Learning Model at Kindergarten Jambi City

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This research is underlined by technological advancement, which develops rapidly, however, it is contrary to the preservation of local cultural wisdom. Therefore, it needs innovation to equalise both of them by using electronic module local wisdom based on area learning. The purpose of this research is to develop a proper and effective module about area learning at Kindergarten Jambi City. This research used research and development (R&D). The development model used was ADDIE development model (Analysis, Design, Development or Production, Implementation, or Delivery, and Evaluation). For the appropriateness of this module, it was validated by the expert of materials and the expert of media. Material and media validation were conducted at stage II, in which the results are that the electronic module is already appropriate and ready to be used. To know the effectiveness, this model was tried by prospective users. The subjects of the try-out in this research were 63 respondents consisting of 30 students and three lecturers of Early Childhood Education (PAUD) University of Jambi (UNJA), and 30 teachers in Jambi City. The results of the try-out show that the electronic module of local wisdom based on the learning area model at Kindergarten of Jambi City is stated as proper and effective to be developed and used in the learning process.

Key words: Electronic module, local wisdom, area learning model.
Introduction

Early childhood is an area where an individual is in a certain process of rapid and fundamental development for their upcoming life (Black et al., 2017). The early childhood child has high scientific curiosity, is a social creature, with a precious fantasy and imagination, is egocentric, and very easy at absorbing learning without even realising it; through what they see, hear, and feel (Preradović, Lešin, & Boras, 2017; Yilmaz, 2016). Kindergarten is an educational institution for children aged 4 - 6 years old in which it’s implementation is a learning process for the children to describe their potency until they can develop themselves as to how it is expected of them (Royer & Moreau, 2016; Sofyan, 2014).

The learning principle in Early Childhood Education (PAUD) is learning through playing and playing while learning (Stone, 2005). One of the learning models in early childhood education is an area learning model or learning model based on an interest, which gives students the chance to choose their activity. In designing the program of the Weekly Activity/Weekly Learning Implementation Plan (RKM/RPPM) and Daily Activity Plan/Daily Learning Implementation Plan (RKH/RPPH) for the students there is an expectation that their development can develop optimally. It is better to introduce the environment to them as the place for them to explore and get experience, especially the environment in which they live, which is the closest place to their life or called local wisdom.

Local wisdom in the form of wisdom based on believed good deeds and values, implemented and sustainable for a very long time (from generation to generation) by the people around the environment based on the place in which they live (Rachmadyanti, 2017). According to Patta (2016), the challenges in the field of education are very complicated. Primarily they are related to the global advance in the field of science and technology. This causes the local wisdom value to start to fade and be left behind. One of the fields which uses technology the most is education.

One of the ways to ease the educators into delivering the learning materials is by using a learning module. By utilising technology that is advanced nowadays, we can find the module in the form of an electronic one (e-module), which is designed in accordance with the learning materials and can be used easily by educators (Preradović et al., 2017).

However, there are still many educators who do not recognise the module in the form of an electronic one. Through the survey which the researcher conducted when looking for the subjects/respondents in this research in Jambi City area, mostly the teachers thought that the electronic module is still rare to be found and used, especially related to local wisdom. From the results of the interview conducted with ‘RAS’, the electronic module is still strange to most users. The learning structure related to local culture wisdom has not been implemented
yet, because the government has just planned to issue the new regulation for implementing the learning related to local wisdom/local content Jambi culture itself in the new academic year (2019/2020).

Based on the explanation above, the writer conducted research and development with the purpose to develop a valid, proper, and effective module about the area learning model for the Kindergarten in Jambi City. The product of this research and development is in the form of an electronic module using software 3D Pageflip Professional.

**Theoretical Review**

*Electronic Modul (e-Module)*

The e-module is a form of material presentation of independent learning arranged systematically into a sure learning unit and presented in the form of electronics (Atas, 2017). Each learning activity in it is connected to the link as the navigation so that the students become more interactive with the program such as video, animation, and audio.

According to The Ministry of Education and Culture (Atas, 2017), there are some advantages of the e-module:

1) Improving users’ motivation because it’s learning is limited and clear and in line with their ability.
2) After conducting an evaluation, educators and students can find out the success being achieved and the progress that is still not achieved.
3) The materials are divided relatively in one semester;
4) The education becomes more useful and powerful because the learning is arranged according to the academic level.
5) The presentation is static, and the printed module can be changed to be more interactive and more dynamic.
6) The verbalism component which is too high in the printed module can be decreased by presenting the visual part by using tutorial video.

While the weakness of the development are as follows:

1) The cost of material development is high and the time needed is long enough.
2) Determining high learning discipline and probably this is not owned by the students in general because they are still not mature enough.
3) It requires higher persistence from the facilitator to continue observing students’ learning process, giving motivation, and consultation individually each time the students need it (Atas, 2017).
3D Page-flip for Professional Application

Based on the official website (http://www.3dpageflip.com/pageflip-3d-pro/) which has been translated, 3D PageFlip Professional can be defined as follows. 3D PageFlip Professional is a comprehensive tool which converts Adobe, Acrobat, PDF, Picture, OpenOffice, Microsoft Office Word, PowerPoint, and Excel and becomes a realistic page flip magazine in the background of 3D multimedia object pinned panorama, including a 360 degrees spinning product, 3D video, flash, audio, button, link, and so on. This enables you to make and read books in 3D space.

Some advantages of 3D PageFlip Professional is as follows:

1) Flipbook media can be flipped like a book when turning the pages to the next ones. It will look like it is moving as if turning the books for real and it can cause an exciting sensation.

2) Each flipbook page is inserted with an animation video or another multimedia to support the learning materials.

3) The e-book or e-module is an interactive media in delivering the information because it can display multimedia illustrations. While it’s disadvantage is when using this application, the users are not accustomed to it yet by looking at the glow of light coming out from the screen of the e-book or e-module reader screen, and this will make the users’ eyes tired (Amalia, 2015).

Local Wisdom

Local wisdom is all forms of wisdom based on the believed, determined, and always implemented and kept from time to time by a group of people existing in a certain place which becomes their residence (Rachmadyanti, 2017). According to Patta (2016), in local wisdom, there is also local cultural wisdom. Local cultural wisdom itself is the local knowledge which has been united with the system of belief, norms and culture and expressed in the tradition or myths over a very long period or continuously.

Patta (2016) states that local wisdom consists of some dimensions, they are:

1) Local knowledge, related to the change and climate cycle of rain and dry, types of flora and fauna, geographical condition, demography, and sociographic.

2) Local value, which is the rules which regulate the life among the society and have been agreed upon together.

3) Local skill, which is the skill to survive the life of each society.

4) Local resources, in general, is the non-renewable resources and renewable resources.
5) The Mechanism of Taking Local Decision, in the society itself has a different mechanism of taking the decision either in levels or stages.

*Area Learning Model*

The learning model is a design which describes the process in detail and creates an environment situation which enables the children to interact in the learning activities until their development can be achieved optimally. There are components of the learning model covering: concept, learning purposes, materials/themes, steps/procedures, method, equipment/learning resources, and techniques of evaluation (Mutiah, 2010).

According to Suyadi (2014), the area learning model is almost the same as the corner learning model. It is just that this learning provides more opportunities for the children to choose their activities in accordance with their interest and prioritising learning experiences meaningfully. This is strengthened by Pangastuti (2014) who says that in the area learning model, the children have more significant opportunities to choose and do the activities in line with themselves based on their interest.

Thus, it can be concluded that the learning model based on the area is the learning which has been designed for fulfilling children’s specific needs and gives more freedom to the child to have the opportunity to choose and do the activity independently based on their interests, needs, and prioritise meaningful learning.

There are some areas of learning and standard equipment used in Early Childhood Institutions such as a Language Area, a Mathematics Area, a Beam Area, a Drama Play Area, an Art and Craft Area, a Music Area, a Sand and Water Area, an Art Area, a Computer Area, an Animal and Plant Area, and a Religion Development Area.

The stages of designing the area learning model according to Suyadi (2014) are as follows:

1) Initial Activity, the teacher welcomes the students’ present and invites them to make a line and do warming up, then pray, give a greeting, tell a story, and discuss the theme and activity which will be conducted.

2) The Main Activity, the teacher, explains the tasks that must be done by the children in each area programmed at that time. Each area is opened in line with the indicators going to be achieved, and then the children are given the freedom to choose the area based on their interest. Then the teacher assesses through observation, providing an assignment, results of work, and work performance.

3) They take a rest or eat for 30 minutes. Interspersed with nurturing good habits to the children, such as arranging/clearing up the toys, washing hands, watching table manners, being introduced to nutritional food and clearing up the cutlery and crockery after eating.
4) The final activity is filled with telling a story, singing, and praying. The purpose of area learning is to create a learning environment which creates absolute necessary of attitude, knowledge, and essential skills for facing certain challenges right now or in the future. Based on the belief that the children will grow optimally if they are involved naturally in the learning process and propel them to explore, experiment, pioneer, and create something (Mutiah, 2010).

High/Scope Model uses around 11 areas for its learning activity, but if more areas existed then there are more chances for the children’s interest choices, and later also more areas must be prepared (Masnipal, 2018).

**Figure 1. The Setting of Learning Environment in the Area Learning Model**

The advantages and disadvantages of the area learning model according to Hijriati (2017) are:

- **The advantages:**
  - there is freedom of children’s interest to play without pressure,
  - there is almost no limitation or pressure in this approach,
  - more facilities are provided based on children’s attention and
  - then, they will get a deep learning experience in the game they choose.

- **The disadvantages:**
  - the children only select one or two-game areas, which become their interest, and there is a possibility that the child moves to many game areas before they complete certain games beforehand.
  - However, it is not impossible that the child can choose the game which is probably very important and they do not choose it because they are not interested in it.
Research Method

The development model used was ADDIE (Analysis, Design, Development, Implementation, and Evaluation). This model was chosen because this is a procedural model which is descriptive, showing clear stages and is accurate to generate a product.

Based on the development model adapted from ADDIE model, their research procedure in this research and development covered five stages. They are; Analyse, Design, Develop, Implement, and Evaluate (Branch, 2009). The try-out subjects in this research and development were the students in class R00-1 semester 2 with a total of 30 students, three lecturers of Early Childhood Education (PAUD) University of Jambi (UNJA), and 30 teachers of the Kindergarten in Jambi City. Overall, these try out subjects for the electronic module local wisdom based in area learning at Kindergarten were 63 people.

The type of data taken in this research was in the form of quantitative data and qualitative data. Quantitative analysis was the result of the assessment in the form of comments and suggestions and feedback from the experts’ team either a material expert or a media expert, which then were analysed qualitatively. All results in the form of comments, suggestions, and feedback from material experts and media experts were explained in the form of descriptive explanation. These results were used to revise the electronic module product local wisdom based at area learning at Kindergarten, which was developed to be better and well-directed, until it was appropriately stated for trying out. After the electronic module, locally-based wisdom was validated by a validator team through the revision that has been done in accordance with the suggestion, and if the results of validation show the electronics module is proper to be presented, then the next step was a product try out.

In this research and development, the instruments used were opened questionnaires and closed questionnaires. Open questionnaires or unstructured questionnaires are the questionnaires presented in the simple form until the respondents can give the answer they want in line with their real condition (Sudaryono & Rahayu, 2013). Closed questionnaires or structured questionnaires are presented and designed to make the respondents choose the answer from various questions in accordance with their characteristics by giving a cross sign (X) or checklist sign (√) (Ramadhan, Mardapi, Prasetyo, & Utomo, 2019; Sudaryono & Rahayu, 2013).

According to Sutja (2014), count the respondents’ percentage from each question presented by using the formula as follows:

\[ p = \frac{F}{N} \times 100\% \]
Description:
p = Counted percentage
f = Frequency obtained
n = Total number of respondents/data

The criteria of assessment used are at four scales:
1 = Poor (K)
2 = Fair (C)
3 = Good (B)
4 = Excellent (SB)

According to Widoyoko (2016), to determine the interval range in the Likert scale starts from the criteria or category Poor (K) until Excellent (SB) used the formula:

\[
\text{Interval Range (i)} = \frac{\text{The Highest Score} - \text{The Lower Score}}{\text{The Number of Criteria Category}}
\]

Results of Development and Discussion

This research from electronic module development of local wisdom based on the area learning model obtained the results in the form of (1) Electronic Module (e-module) local wisdom based on area learning model in Kindergarten Jambi City. (2) Validation Assessment of the experts’ team from two validators, a material expert and a media expert towards the content of the materials in the form of electronic modules. (3) Respondents assessment, 63 people which consisted of teachers, lecturers, and students of Early Childhood Education (PAUD) University of Jambi (UNJA).

The electronic module development on area learning model at Kindergarten is developed with the ADDIE Model which consists of 5 stages, they are:

Analysis

Material Analysis

This stage is the initial stage starting from identifying the implementation of area learning in the form of curriculum identification, learning program identification, learning theme identification, children’s development, aspects identification, learning plan identification, either program of Weekly Activity/Weekly Learning Implementation Plan (RKM/RPPM) or Daily Activity Plan/Daily Learning Implementation Plan (RKH/RPPH), and the strategy used in delivering the learning. Besides that, the students and teachers also have limitations in the learning source, especially on the materials area learning model related to local wisdom.
Media Analysis

Educators or prospective educators need innovation towards the guideline or handbook in the implementation of the area learning model because supporting media is seldom found as the learning source in the activities on the area learning model, which is extremely related to local wisdom. The purpose determined in this development is making a learning media electronic module of local wisdom based on area learning at Kindergarten Jambi City using software 3D Pageflip Professional.

Design

Development Schedule

Making an electronic module of local wisdom based on an area learning model at Kindergarten Jambi City needs more time than four months, which is started from March until July 2019.

Development Team

Related parties in this electronic development module are:

Table 1: Development Team

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<tr>
<th>No</th>
<th>Name</th>
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<tbody>
<tr>
<td>1</td>
<td>Dr.Drs.H. Hendra Sofyan, M.Si</td>
<td>Advisor I</td>
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<tr>
<td>2</td>
<td>Nyimas Muazzomi, S.Ag.,M.Pd.I</td>
<td>Advisor II</td>
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<tr>
<td>3</td>
<td>Dr. K.A. Rahman, S.Ag.,M.Pd.I</td>
<td>Material Expert</td>
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<tr>
<td>4</td>
<td>Dr. Jefri Marzal, M.Sc,D.I.T</td>
<td>Media Expert</td>
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Media Specification

a) The product developed is in the form of learning media, which can be made as electronic-based learning sources; b) The product being developed named an electronic module of local wisdom based in kindergarten. The materials presented consisting of Module 1 Local Wisdom and Module 2 Learning Media Model, Summary, Formative Test, List of References, Key Answers and Writer’s Biodata. c) The product display is in the form of an electronic module in the form of 3 Dimension (3D). d) The product uses a picture, video, and music which are based on local wisdom. e) The product generated can be used through laptop and android. However, beforehand, an android can be used if 3D Reader is already downloaded.
Stages of Making the Media

Before the process of making the product, the first thing to do is to look for the materials which will be presented in the electronic module.

These are the stages conducted to produce a product which can be used as learning material;

1) Design the storyboard, which is the concept of delivering an idea or initial sketch from making an electronic module.
2) Design the cover and background by using software Corel draw.
3) Package the materials, pictures, cover, background into the product by using software Microsoft PowerPoint and directly set the font size, font colour, layout, and set the size of the picture and the video.
4) Add description and background of instrumental music in the video by using software Kine Master.
5) Convert the product design made by using Powerpoint software into pdf format.
6) Importing the product into software 3D PageFlip Professional.
7) Add video in the materials page provided.
8) Add the link at the video chart and the picture at the list of the content page.
9) Add meaningful animation on the page provided.
10) Save the file in format pfprj (publish).

Development

Before stated, it is proper for the try-out, that the product first must go through a validation step, which is conducted by both material and media expert validators.

Materials Validation

The process of materials’ validation in this research is conducted in two stages. Validation is conducted until the materials presented in the electronic module is proper for the try-out. The results of the validation by material experts stage I, obtained an assessment score of 47 with a percentage of 78.33%, and it is categorised into “Good”. The comments and suggestions given have too much animation, and the font size needs to be increased. After this revision, the validation is continued to materials’ expert stage 2. The results obtained at the expert validation step 2 has the number of assessment scores as 55, with a percentage 91.66%, and it is categorised into “Excellent”.
**Media Validation**

The validation process by media experts is conducted in two stages. The results of media expert validation stage I obtains a score of 39 with a percentage of 65% and is categorised into “Good”. The suggestion and comment have given on the cover needs the Jambi icon. The picture, animation, video and audio either in the materials or background must be related to local wisdom of Jambi; it requires a combination of the size, colour, and type of different fonts. After the revision at stage 1, it is continued with media expert validation stage 2. The results obtained a score of 55 with the percentage of 91.66% with category “Excellent”. It can be noticed that the electronic module of local wisdom based on the area learning model in the Kindergarten at Jambi City has been proper for the try-out.

**Implementation**

In this stage, the electronic module of local wisdom based on area learning in Kindergarten will be tested and given a score by respondents through questionnaires, with 25 questions given to the respondents which are chosen randomly with a total of 63 people. The research subjects in this research and development consisting of 30 students of Early Childhood Education (PAUD) at the University of Jambi (UNJA), 30 teachers of Kindergarten in Jambi City, and three lecturers of Early Childhood Education (PAUD) University of Jambi (UNJA).

The results of the research of the responses of the students of Early Childhood Education (PAUD) University of Jambi (UNJA) on the electronic module show satisfying results with a score of 2.548 and a percentage of 86.13% and categorised into “Excellent”. Then the score obtained from the assessment of teachers of Kindergarten within Jambi City also gets a good result, which is 2.526 with a percentage 84.2% and categorised into “Excellent”. Next based on the assessment obtained from the product try-out conducted by the lecturers of Early Childhood Education (PAUD) University of Jambi (UNJA), overall obtain the final result with score 2.37 with a percentage of 79% and categorised into “Good”.

**Evaluation**

Through validation conducted by the expert team, either the material expert or the media expert in the stage of development, they obtained the assessment results in the form of comments and suggestions which makes the product electronic-module better and more well directed from the side of materials content and the display. Next, the assessment obtained from the product try-out on 62 respondents aimed to see the benefits in the users, the attractiveness and the easiness in operating electronic module local-based electronic on the area learning in Kindergarten. Based on stage by stage conducted, the electronic module of local wisdom based on area learning in Kindergarten overall is stated properly to be used as
the learning resources or as the guide in the area learning model of local wisdom based on Jambi culture.

Discussion

The development of this electronic module of local wisdom based on the area learning model in Kindergarten, uses software 3D page flip Professional, which is developed by using ADDIE development. The first stage is the analysis stage, based on the materials analysis, in the area model learning, especially the learning plan either Daily Activity Plan/Daily Learning Implementation Plan (RKH/RPPH) or the program of Weekly Activity/Weekly Learning Implementation Plan (RKM/RPPM), which must be adjusted to the learning theme. Besides that, not many found in the learning utilises local culture, especially in Jambi City. Meanwhile learning media with local wisdom in it is very difficult to be seen and only counts on the internet and the meeting of teachers to obtain the learning resource. The next stage is making the product design of the electronic-module, which would be developed by making the storyboard as the initial design until the development stage, and the product is developed by using software 3D PageFlip Professional.

At the development stage, this media is validated by one material expert and one media expert. This stage is conducted until the validation result is good and shows product properness to be developed. Material and media validation are conducted in two stages. The comparison between the first stage and the second stage can be seen in the following diagrams:

**Figure 2. Validation of Material Stage 1 and Stage 11**
Stage II of validation by a material expert shows a total score of 55 with the percentage of 91.66%, and it is categorised as “Very Good” so that the material presented in the electronic module is decent to be tested.

The comparison of media validation stage I and stage II.

**Figure 3. Validation of Media stage I and Stage II**

![Bar chart showing comparison between Stage I and Stage II validation scores](image)

After validation stage II was conducted, the score obtained is 55, and if present, the result becomes 91.66% with the category of “Very Good”. This means that the result obtained from the validation of media shows that the electronic module of local wisdom based in the area learning at Jambi City in Kindergarten is decent enough to be tested.

The testing result on students of Early Childhood Education (PAUD) University of Jambi (UNJA), obtained a score of 2.584 with the percentage of 86.13% and a category “Very Good”. Then the testing result in teachers of Early Childhood Education (PAUD) in Jambi City that involved nine schools in Jambi City, showed a positive response with a score of 2.526 and if presented it becomes 84.2% and categorises as “Very Good”. The last is the response of the lecturer of Early Childhood Education (PAUD) University of Jambi (UNJA), obtained score of 2.37 and if given it becomes 79% with the category “Good”, which means that overall, this electronic module can be used as a learning media or source of learning independently, that can be conducted by an educator or prospective educator.

The last stage conducted in this development is evaluation. In this stage improvement based on comments, suggestions, and input from the expert team was conducted so that the product that being developed became more well-focused, easy to understand and could be used as a guide as learning media especially in the area learning model.
Conclusion

This development research resulted in a product in the form of electronic-module and a learning source of local wisdom, based in the area learning model in Jambi City Kindergarten. From material content and display of this electronic-module, media has been validated by a team of experts in their fields with validation of each of II stages. The testing result of the electronic module of local wisdom based in the area learning model in Jambi City Kindergarten shows a positive response. With that positive response, then the electronic module of local wisdom was found to be decent enough to be tested as a learning source and learning media. This electronic module of local wisdom based in the area learning model in Jambi City Kindergarten can be implied as one of the alternatives of learning source or learning media for the user, that can help people, whether an educator or prospective educator in learning independently. Then, rather than that, this electronic module can be implied as guidelines for other related research. For the further researcher, make electronic module design as interesting as possible and make it better than what has existed. In this research, testing for experiment and class action research (PTK) is not yet conducted, and it is better for the next study to use a type of experiment research or class action research (PTK), to find out the users learning result of the electronic module of local wisdom based in the area learning model in Jambi City Kindergarten.
REFERENCES


