



Development of e-Modules for Babysitter Education on Infant Feeding and Drinking in Family Welfare Education Study Program

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ABSTRACT

This research is motivated by the absence of teaching materials in the Babysitter Education Course in the Family Welfare Education Study Program that utilizes technology, as well as the incomplete material for preparing and giving baby food and drinks in this course. Therefore, it is necessary to develop e-module teaching materials for the Babysitter Education Course on the material of providing baby food and drinks in an effort to respond to technological advances. The purpose of this study is to develop an e-module for Babysitter Education on Feeding and Drinking Babies with the help of the Sigil Application. This research uses the Research and Development method with the Planning, Production, and Evaluation (PPE) model. The research sample consisted of babysitter material experts and learning media experts. The research instruments used interview guidelines, documentation studies, and expert judgment validation formats. The findings of this study, the Babysitter Education e-module for Feeding and Drinking Babies is very feasible to use. The advantage of this e-module is that it can be opened on various digital platforms.

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1. INTRODUCTION

National education in Indonesia aims to educate the Indonesian people as a whole (Wijayanti, 2016). In order to achieve these educational goals, learning in each educational unit must be organized systematically (Anggraini, 2015). Learning must also be carried out effectively, namely by making students able to learn easily, pleasantly, and can achieve the goals that have been set (Asyhari and Silvia, 2016). Therefore, effective classroom learning is very important to achieve educational goals. In addition, effective learning can also develop students in carrying out the learning process independently (Suknaisith, 2014). Based on this, to achieve an educational goal, learning in each educational unit must be organized systematically and effectively. Learning must follow the principle that all students can learn easily, enjoyably and independently, so that educational goals will be achieved effectively.

Advances in information technology and science have a major influence on education (Widiana, 2016). Education that utilizes advances in technology and science can create effectiveness in achieving an educational goal. This is in line with Muhson's (2010) opinion that education needs to utilize advances in science and technology in order to achieve its goals effectively. The development of science and technology, especially in the field of information technology, cannot be underestimated in the field of education. Therefore, advances in information technology and science need to be utilized because they have a major influence in the field of education. Utilizing advances in technology and science can make educational goals achieved effectively.

Nowadays, information technology has been widely applied in the field of education. Information technology is often used as teaching materials in learning activities, one of which is electronic modules or often called e-modules (Winaya et al., 2016). The rapid advancement of technology has encouraged the replacement of print technology with electronic technology in learning activities (Winatha et al., 2018). This technological advancement has made modules, which were originally printed teaching materials, changed their presentation to electronic form, giving birth to a new term, namely e-modules.

e-Modules are teaching materials that develop printed modules into electronic form. The principle of development between printed modules and e-modules has no significant difference. e-Modules are the development of printed modules in digital form that utilize technology and adapt a lot from printed modules (Sugihartini and Jayanta 2017). e-Modules are packaged more interestingly than printed modules because in addition to displaying text and images, e-modules can also display audio and video. e-Modules can also be opened on tablets, smartphones, computers or PCs, so that e-modules can be accessed anywhere and anytime independently (Riyadi and Qamar, 2017). Therefore, e-modules can make the learning process easier, interesting and fun because they can display audio and video and can be accessed anywhere and anytime in their own way. In addition, e-modules also utilize technological advances, so that they can create effectiveness in achieving educational goals. Thus, it can be understood that e-modules are interesting and effective teaching materials to achieve an educational goal if applied in learning activities, one of which is in babysitter education learning activities.

Babysitter education is one of the elective scientific and expertise courses in the Family Welfare Education Study Program (PKK), Faculty of Technology and Vocational Education (FPTK), Universitas Pendidikan Indonesia (UPI). Based on preliminary studies that have been

conducted, it is known that the Babysitter Education Course in the PKK FPTK UPI Study Program only uses teaching materials in the form of printed modules. The Babysitter Education Lecturer revealed that teaching materials in the Babysitter Education Course need to be developed. Teaching materials that need to be developed are teaching materials that can be accessed on various digital platforms, so that students can more easily carry out learning because these teaching materials can be studied anywhere and anytime. e-Modules are teaching materials that can be accessed on various digital platforms, so that students can learn anywhere and anytime in their own way (Riyadi and Qamar, 2017). In addition, e-modules also utilize technological advances, so that learning objectives can be achieved effectively (Winaya et al., 2016; Muhson, 2010). Based on this, researchers are interested in developing babysitter education e-modules as teaching materials for the Babysitter Education Course.

Competencies regarding babysitters that must be achieved during one semester in the Babysitter Education Course are maintaining babies and the environment, providing baby food and drinks, preventing accidents in babies, providing first aid and minor illnesses, maintaining baby health, and caring for babies. Based on the results of interviews with lecturers teaching Babysitter Education courses, there is a need for material development in the competency of providing baby food and drinks. The material learned in the competency of providing baby food and drinks so far is the growth and development of children under five, the concept of care and care of toddlers, toddler food menus, how to make toddler menus, and the process of providing food and drinks for toddlers. While the material that needs to be developed in this competency is material about the types of ingredients for baby food and drinks, a menu of baby food and drinks made from local food, a list of baby food and drinks, baby feeding positions, and baby feeding and drinking. With the development of this material, students can learn the material to provide baby food and drinks more completely.

Based on the background that has been described, in this study researchers will develop an e-module of babysitter education for infant feeding and drinking. The material in this e-module is baby feeding and drinking material that needs to be developed, namely material about the types of ingredients for baby food and drinks, a menu of food and drinks for babies aged 6-12 months made from local food, a list of baby food and drinks, baby feeding positions, and baby feeding and drinking. The development of this e-module will use the Sigil Application in the development process. Sigil application was chosen because this application can create digital books or e-modules in epub format. e-Modules with epub format can be read on various web-based digital platforms, desktop, Android, iOS, SonyReader, and others. The development of e-modules for babysitter education in infant feeding and drinking is expected to be used as teaching materials for Babysitter Education courses that can be accessed and studied by students anywhere and anytime easily.

2. METHODS

The method used in this research is the Research and Development method with the PPE (Planning, Production, Evaluation) model. The stages of this research are as follows:

- (i). Planning. Needs analysis activities through interviews with Babysitter Education Course Supervisors and documentation studies of the Babysitter Education Course syllabus.

- (ii). Production. The development of the Babysitter Education e-module for Feeding and Drinking Babies using the Sigil application is in accordance with the data obtained from the results of the needs analysis.
- (iii). Evaluation. Evaluation of the e-module Babysitter Education for Feeding and Drinking Babies through validation using expert judgment. The validation results were calculated using the percentage formula according to Ali as follows:

$$P = \frac{f}{n} \times 100\%$$

Description:

P : Percentage

F : Score/frequency of "Worthy" answers

N : Maximum score/number of questions

100% : Fixed number

The interpretation of the data used in validation refers to the assessment qualifications which are adjusted to the research to be carried out, the qualification explanation is as follows:

- 81% - 100% : The development of babysitter education e-modules on infant feeding and drinking is very feasible.
- 61 - 80% : Development of babysitter education e-modules on infant feeding and drinking made feasible.
- 41% - 60% : The development of babysitter education e-modules on infant feeding and drinking is feasible.
- 21% - 40% : Development of babysitter education e-modules on infant feeding and drinking made less feasible.
- 0% - 20% : The development of e-modules on the preparation and feeding of infant food and drink is not feasible.

3. RESULTS AND DISCUSSION

The findings in this study refer to data that has been obtained through interviews, documentation studies, and expert judgment. The results of interviews and documentation studies obtained information that so far the learning process of Babysitter Education Course has not used teaching materials that utilize technology. Based on this, the development of teaching materials for the Babysitter Education Course was carried out in the form of an e-module with the help of the Sigil Application entitled Babysitter Education for Feeding and Drinking Babies. While the results of expert judgment provide an overview of the feasibility of the Babysitter Education e-Module for Feeding and Drinking Babies. The results of expert judgment validation are presented in **Table 1** as follows:

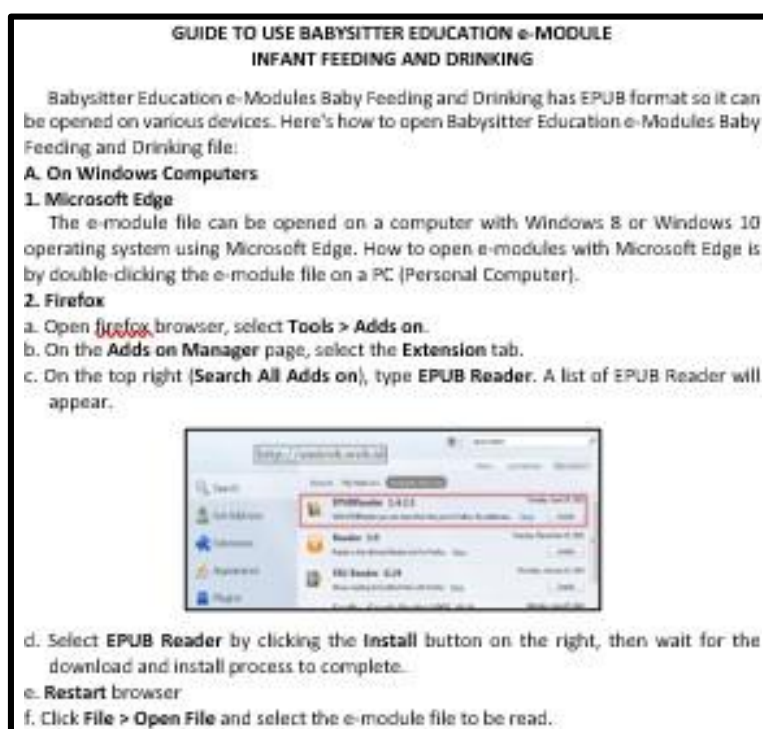
Table 1. Expert Judgment Validation Results

Aspek Penilaian	Indikator	Penilaian Validator*	Presentase
Kelayakan	Desain sampul e-modul	1	
Kegrafikan	Desain isi e-modul	1	
Komponen e-Modul	Komponen e-modul	1	
	Kesesuaian materi dengan KD	1	

Aspek Penilaian	Indikator	Penilaian Validator*	Presentase
Kelayakan Isi	Keakuratan materi	1	100%
	Kemutakhiran materi	1	
	Mendorong keingintahuan	1	
Kelayakan Penyajian	Teknik penyajian	1	
	Pendukung penyajian	1	
	Penyajian pembelajaran	1	
	Kelengkapan penyajian	1	
Kelayakan Bahasa	Lugas	1	
	Komunikatif	1	
	Dialogis dan interaktif	1	
	Kesesuaian dengan perkembangan peserta didik	1	
	Kesesuaian dengan kaidah bahasa	1	
Rata-Rata Keseluruhan Aspek Kriteria			100% Sangat Layak

* Description: 1 = Appropriate, 0 = Not Appropriate

The results of the expert judgment validation showed that the Babysitter Education e-module for Feeding and Drinking Babies in all aspects received a percentage of 100% with a very feasible category. However, media experts commented that the different epub readers used to open the e-module resulted in different e-module displays. Therefore, researchers created an e-module usage guide so that readers and users of the e-module can use the epub reader appropriately. The e-module usage guide is shown in **Figure 1**.



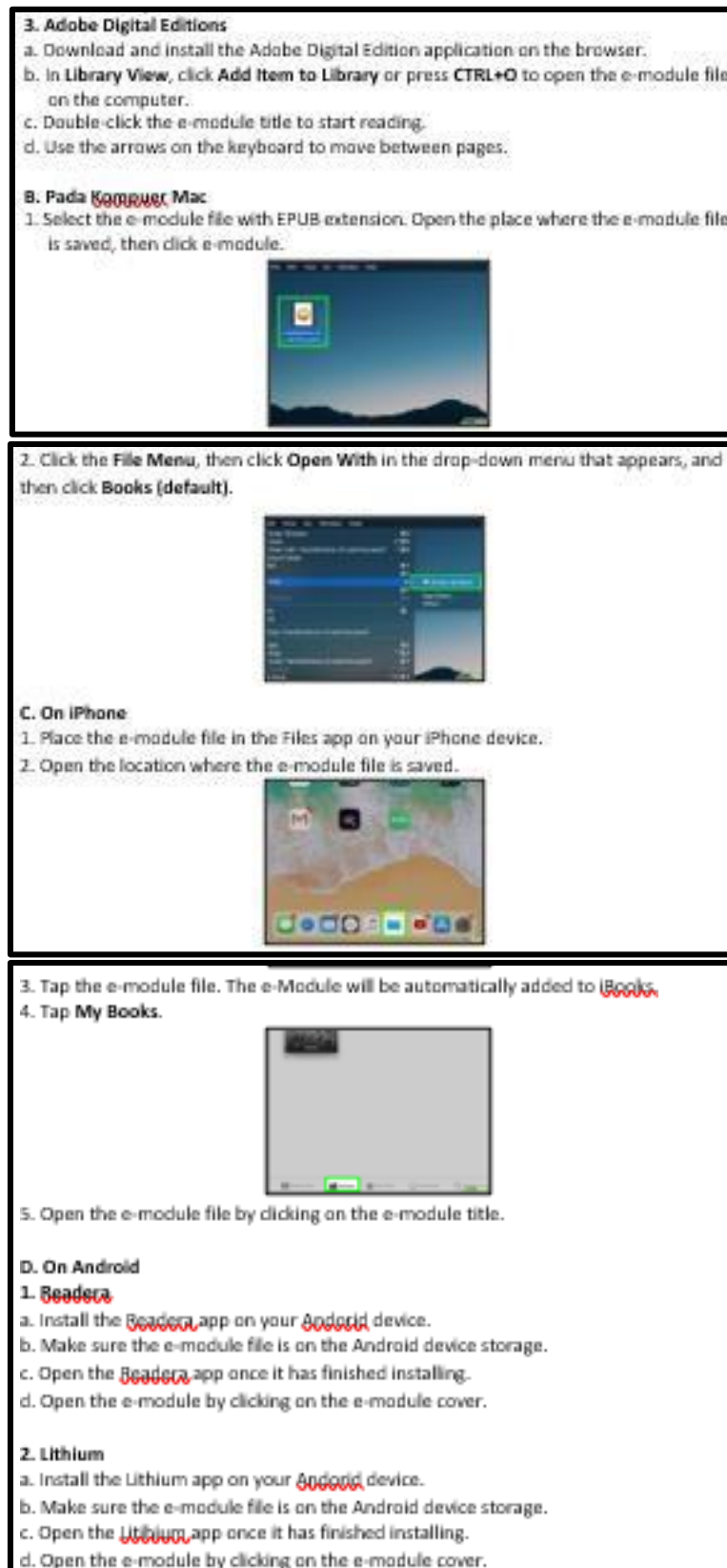


Figure 1. Guide to the use of the Babysitter Education e-Module Infant Feeding and Drinking

The results of the study indicate that the Babysitter Education e-module for Feeding and Drinking Babies is easy to apply because it can be opened on various digital platforms. This is in line with the opinion of Riyadi and Qamar (2017) that e-modules are teaching materials that can be accessed on various digital devices. Besides being able to be opened on a PC, e-modules can also be opened on Android and iOS-based smartphones both offline and online. Based on the results of research conducted on Telkom University students, the intensity of smartphone use among students is included in the high category with a percentage reaching a value of 69% (Gifary and Kurnia, 2015). With this, e-modules can be easily accessed by students anywhere and anytime.

The Babysitter Education e-Module for Feeding and Drinking Babies has epub content, so it requires an epub reader in its use. This is in accordance with research that has been conducted by several researchers, that e-modules made with the help of the Sigil Application require an epub reader to open them. After the e-module was validated, it was found that the different epub reader used had an effect on the appearance of the e-module. This means that the appearance of the e-module can vary according to the epub reader used. With this, so that the difference in e-module display is not too significant, the epub reader used to open the e-module is limited to several epub reader applications only.

The results of the development of the Babysitter Education e-module for Feeding and Drinking Babies are in the very feasible category with the conclusion that the e-module can be implemented as teaching material. With this, e-modules need to be implemented in the Babysitter Education Course to analyze the effectiveness of e-module users in understanding the material. However, the material in the Babysitter Education e-module for Infant Feeding and Drinking is only limited to the material on the competency of preparing and giving infant food and drinks. Therefore, the Babysitter Education e-module for Baby Feeding and Drinking can only be implemented in the Babysitter Education Course for the competency of preparing and giving baby food and drinks.

4. CONCLUSION

The conclusion of the research results of the development of e-modules for Babysitter Education for Feeding and Drinking Babies in the PKK Study Program is:

- 4.1. This research and development produced a product, namely the Babysitter Education e-module for Feeding and Drinking Babies which refers to the research and development design of the PPE model. The material discussed in this e-module is baby feeding and drinking.
- 4.2. The results of the validation of e-modules by media experts regarding the feasibility of grammar and content components of e-modules obtained a percentage of 100% with a very feasible category.
- 4.3. The results of e-module validation by material experts regarding content feasibility, presentation feasibility, and language feasibility obtained a percentage of 100% with a very feasible category.
- 4.4. The validation results show that e-modules can be used as teaching materials.

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