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Development of Digital-Based Bathroom Cleaning Handout with Sigil Application in PKK Study Program

Rini Kartini*, Neni Rohaeni, Yoyoh Jubaedah

Universitas Pendidikan Indonesia, Bandung, Indonesia
*Correspondence: E-mail: rinikartini21@upi.edu

A B S T R A C T

This research generally aims to develop handouts that were originally printed into digital handouts using the sigil application. The purpose of this research is to develop digital handouts through the sigil application as a student learning resource that contains material about cleaning bathrooms (hotel guest bathroom cleaning process) in the PKK Hospitality Accommodation Concentration Study Program. This study uses the research and development method with the planning, production and evaluation (PPE) model. Data collection techniques were carried out by interviews and validation tests through expert judgment to academic housekeeping material experts, academic learning media experts and Room Section course lecturers. The results of this study indicate that the handout cleaning bathroom through the sigil application is declared very feasible to be used as a learning resource for students in the PKK UPI Hospitality Accommodation Concentration Study Program. Recommendations from this study are that lecturers and students are expected to be able to use handouts through the sigil application, and for further researchers are expected to be able to develop handouts through the sigil application with different materials.

A R T I C L E   I N   F O

1. INTRODUCTION

The rapid development of technology and information has a positive impact on the world of education. Digitalization in education is a new breakthrough from the government, especially the Ministry of Education and Culture, from elementary schools to public universities, there is a need for digitalization transformation (Mathur & Gupta, 2016). Digitalization of education is the process of applying and utilizing digital in learning, ranging from the education system, curriculum to educational administrative devices (Anurogo *et al.,* 2023). The digitization program in education is one of the breakthroughs of education minister, which utilizes the development of information and communication technology (ICT) to facilitate lecturers and students in the teaching and learning process.

Argues that the current condition of the digitalization program in the realm of education is still lacking, one aspect that needs to be developed in the world of education and made new innovations according to the direction of the Ministry of Education and Culture is teaching materials. Teaching materials are all forms of materials used to assist teachers and lecturers in carrying out the learning process. The types of teaching materials are very varied, including printed and non-printed teaching materials. Print teaching materials consist of handouts, books, modules and student worksheets, while non-print teaching materials consist of radio, cassettes and audio compact discs (Wahyuni *et al.,* 2024).

Family Welfare Education Study Program is one of the study programs at the University of Education Indonesia. The study program contains several concentrations, one of which is Hospitality Accommodation. The course that must be taken by Hospitality Accommodation Concentration students is Room Section. The course contains several basic competencies (KD) that must be mastered by students, one of which is cleaning the bathroom. Handouts about cleaning bathroom as a source of teaching materials used by lecturers in the Hospitality Accommodation Concentration are still limited to printed handouts, there has been no digitalization transformation according to the direction of the Ministry of Education and Culture. There needs to be a new breakthrough that is more innovative and creative in accordance with the development of digitalization. Handouts are teaching materials in the form of writing from several literatures relevant to the material or basic competencies prepared by lecturers with the aim of enriching student knowledge (Wahyuni *et al.,* 2024). The functions of handouts according to Steffen and Peter Ballstaed include: (1) helping students not to need to record existing material; (2) as a companion to the lecturer's explanation; (3) as a student reference material; (4) motivating students to study more actively; (5) reminder of the main points of material taught; (6) provide feedback.

The sigil application is an application that is in accordance with the development of digitization in the world of education. The sigil application according to Tamrin & Arfandi (2024) is one of the EPUB editor software which is an open course that can be used to create digital books or digital handouts. Handouts as a source of teaching materials can be transferred into the application. The benefits of using these applications include being able to be read using various electronic devices such as tablets, computers and smartphones, can be accessed easily and save printing costs (Maharani, 2015). In addition, it can contain images, audio and learning videos to clarify the handout.

The handout to be developed contains material about clening bathroom. Cleaning bathroom is how the roomboy cleans and organizes the equipment in the guest bathroom

so that it is clean, safe, and comfortable. The cleaning bathroom material includes several English terms such as the term cleaning equipment (cleaning equipment), guest supllies (guest bathroom equipment), and so on and contains material about the steps of cleaning the guest bathroom loaded in the form of pictures. The advantage of the sigil application is that its features are complete and easy to read and can load material about English terms equipped with images, videos and audio (Maharani, 2015). The advantages of the sigil application are very suitable for clening bathroom material.

States that currently students in public universities are advised to be able to master foreign languages, one of which is English. Therefore, it is necessary to innovate teaching materials that can support students to better master foreign terms. This innovation can be realized through the use of handouts in the sigil application. Handout innovation through the sigil application provides many benefits for students, especially those who teach Room Section courses. One of the benefits is that students can better master English terms in cleaning bathroom material.

Based on the results of a preliminary study in 2020 conducted by researchers through observations and interviews with lecturers of the Family Welfare Education Study Program and students of the Hospitality Accommodation Concentration studying at the Family Welfare Education Study Program, Universitas Pendidikan Indonesia, information was obtained that in the teaching and learning process of the Room Section course there were already teaching materials in the form of cleaning bathroom handouts. However, based on observations there are several problems, which can be identified as follows: (1) students do not fully understand the material, especially things related to English terms because the available handouts do not contain material clearly; (2) the available handouts are still in printed form which is less practical and there has been no breakthrough in digitizing education according to the direction of the Ministry of Education and Culture; (3) handouts need to be developed more innovatively in explaining the material. Based on these problems, it is necessary to develop cleaning bathroom handouts that are made more varied according to student needs and adapted to the development of educational digitalization. Therefore, researchers want to develop a digital-based bathroom cleaning handout through the sigil application.

2. METHODS

This research uses the Research and Development method and uses the PPE approach which consists of three stages, namely Planning, Production, and Evaluation (Pratama, 2024). The PPE implementation stage is in accordance with the research objectives, namely the development of a digital-based bathroom cleaning handout with the sigil application in the PKK study program.

Participants in this study act as validators or people who carry out validation who are material experts regarding housekeeping and learning media experts.

2.1. Research Instruments

The instruments in this study used observation guidelines, interview guidelines, and expert judgment formats (Khidhir & Rassul, 2023). The observation guideline contains guidelines on observation activities related to Room Section courses with cleaning bathroom material and the availability of learning media used during the Room Section

learning process. Interview guidelines contain guidelines for conducting interviews with Room Section lecturers to obtain information related to cleaning bathroom learning activities that have been carried out and learning media used during the cleaning bathroom learning process. Expert judgment is carried out by experts to validate the feasibility of handout cleaning bathroom as a learning media for students in PKK Study Program made by researchers.

2.2. Data Analysis Techniques

2.2.1. Data Reduction

Data reduction is a process of condensing and summarizing information gathered from interviews and documentation studies. This step is essential to make the data more manageable and focused, eliminating unnecessary details. Through this process, the raw data is distilled into key points that are relevant to the research questions and objectives. Once the data is summarized, it undergoes a filtering process to ensure that only the most pertinent information is retained. This step involves evaluating the data to determine which pieces best align with the specific needs of the study. The result is a refined set of data that is both concise and directly applicable to the research goals.

2.2.2. Display Data

Display data is used to describe in general the results of interviews about the development of digital-based bathroom cleaning handouts through the sigil application. The results of this research are then described to make it easier to understand.

2.2.3. Data Validation

The stages of assessing digital-based bathroom cleaning handouts through sigil applications conducted by validators using validation sheets to find out the shortcomings of digital-based bathroom cleaning handouts through sigil applications that have been made.

2.2.4. Data Processing

Data processing in this study is to calculate the percentage of answers given by experts through validation sheets. The percentage aims to determine the number of assessment results obtained from the clening bathroom handout validation results. The formula used to calculate the percentage of data is:

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

Description:
P = Presentation sought (feasibility of handout cleaning bathroom)
f = Frequency being sought percentage
n = Number of frequencies
100% = Fixed number

2.2.5. Data Interpretation

Data interpretation in this study uses the feasibility criteria for digital-based handout cleaning bathroom through the sigil application that has been designed. The eligibility criteria can be seen through the **Table 1**.

Table 1. Validation Level

No.	Criteria	Validation Level
1.	81% - 100%	Very feasible with minor revisions
2.	61% - 80%	Fair with revisions
3.	41% - 60%	Quite feasible with revisions
4.	21% - 40%	Less feasible with many revisions
5.	0% - 20%	Not feasible to use

2.2.6. Revision

This stage is the improvement stage after obtaining the results of expert judgment validation to perfect the digital-based cleaning bathroom handout through the sigil application that has been created so that it is suitable for use as a cleaning bathroom handout to support student teaching materials.

3. RESULTS AND DISCUSSION

The findings in this study are data processed through the planning stage based on needs analysis, handout development process, and expert judgment.

3.1. Results of Needs Analysis of Handout Development Cleaning Bathroom through Sigil Application in PKK Study Program

The needs analysis aims to explore data regarding the availability of handout cleaning bathroom used by PKK Study Program. The results of the interviews that have been conducted can be seen in the **Table 2**.

Table 2. Interview Results

No	Aspects observed	Observation Results	
		No Yet	**Already**
1.	Availability of learning resources in the form of handout cleaning bathroom		✓
2.	Completeness of material in the cleaning bathroom handout	✓	
3.	Handout cleaning bathroom contains English terms in detail	✓	
4	Handout cleaning bathroom has followed the digital development (ICT)	✓	
5	Handout cleaning bathroom is equipped with pictures, audio and video learning.	✓	

The results of the analysis illustrate that learning activities in the Room Section course with cleaning bathroom material in the PKK Study Program still use printed handouts. Therefore, it is necessary to develop handouts using sigil applications according to the development of digital technology.

3.2. Development of Handout Cleaning Bathroom through Sigil Application

The handout created contains material exposure regarding the process of cleaning the hotel guest bathroom (cleaning bathroom). Cleaning bathroom is a term used for the process of cleaning a guest bathroom that is usually done in a hotel (Park *et al.,* 2019).

The creation of a digital-based cleaning bathroom handout begins with determining the content to be contained in the sigil application. After that, researchers made flowcharts and storyboards. Flowcharts are made to determine what menus and subject matter will be contained in the handout. While the storyboard is made to provide information about the sequence of handout displays in the sigil application starting from the cover to the bibliography.

Making the next handout is to compile a framework consisting of a cover, preface, introduction that contains (basic competencies, subject matter, time allocation and instructions for use), material description of the cleaning bathroom process, evaluation questions consisting of (knowledge and skills domain questions) and a bibliography. After preparing the framework, the next step is to create a handout in the sigil application by entering cleaning bathroom material consisting of text, images, video and audio. Edit all material attractively, if you have saved it in EPUB format.

Handouts that have been saved in EPUB format are then entered into Google Drive so that the document is easily downloaded by students. To open the EPUB format file must use the EPUB reader application, one of which is lithium. The lithium application can be downloaded for free on the smartphone playstore. The lithium application is one application that is easy to use and can adjust the font size and margins as desired (Wang *et al.,* 2015).

3.3. Results of Handout Validation of Digital-Based Bathroom Cleaning with Sigil Application in PKK Study Program

The feasibility test of the cleaning bathroom handout using the sigil application was carried out by academics in the field of material, namely lecturers teaching Room Section courses in the Family Welfare Education study program and academic housekeeping experts from Cinnamon Boutique Syariah Hotel and academic learning media experts, namely PKK Study Program lecturers who are experts in learning media. The results of the validation of the development of handout cleaning bathroom using the sigil application by all validation experts in the PKK study program get an average feasibility percentage of 100%. So it is stated that the handout cleaning bathroom through the sigil application is very feasible to be used by PKK study program lecturers in the concentration of Hospitality Accommodation in learning cleaning bathroom.

4. CONCLUSION

The results of the needs analysis show that the development of cleaning bathroom handouts using the sigil application is needed as a learning resource for students in the PKK UPI Hospitality Accommodation Concentration Study Program.

The development of cleaning bathroom handouts using the sigil application is the development of digital handouts that were previously printed. The handout serves as a student learning resource that contains elements of text, images, video and audio learning to increase student understanding of cleaning bathroom material.

The handout feasibility test was carried out by two material experts and two media experts. The validation results obtained from all validators received very feasible criteria with minor revisions that have been corrected. This shows that the development of cleaning bathroom handouts using the sigil application is very feasible to use as a learning resource for students.

AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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