

DEVELOPMENT OF A SEQUENCE OF SERVICE E-MODULE BASED ON ARTICULATE STORYLINE 360 FOR PHASE F STUDENTS OF CULINARY VOCATIONAL HIGH SCHOOL

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ABSTRACT

This study aims to determine the development results, material feasibility, media feasibility, and student responses to the Sequence of Service e-module based on Articulate Storyline 360. The method used is Research and Development (R&D) with the 4D model (define, design, develop, disseminate), but it was only carried out up to the develop stage due to time constraints. Validation was conducted by three material experts and three media experts, and a limited trial involved 31 eleventh-grade students of the Culinary Arts Program at SMKN 8 Surabaya. Data collection techniques used questionnaires and were analyzed using descriptive quantitative methods. The results showed that this e-module can be accessed both online and offline via a link or Android application. The evaluation from material experts obtained a percentage of 97.6%, categorized as very feasible, while the evaluation from media experts obtained a percentage of 96.7%, also categorized as very feasible. In addition, student responses to the e-module reached 84.3%, categorized as very good. Based on these results, the Sequence of Service e-module based on Articulate Storyline 360 is declared feasible to be used as a learning medium.

Keywords: E-module, Sequence of Service, Articulate Storyline 360, Culinary Vocational School

INTRODUCTION

Education in Indonesia continues to evolve in response to changing times, including through the application of the Merdeka Curriculum. This curriculum offers flexibility for educators and learners in choosing learning methods suited to individual needs, with a focus on student-centered learning. It aims to create relevant and contextual learning experiences that promote deep mastery of competencies (Ginanto et al., 2024). One of the strategies for its implementation is the use of technology as an innovative and engaging learning medium.

In Culinary Vocational High Schools, the Merdeka Curriculum plays an important role in preparing students for the workforce or further education. It supports a competency-based learning process that combines theory and practical skills in line with industry demands. Through contextual and project-based learning, students are trained to think critically, creatively, and build strong communication and collaboration skills.

Culinary schools structure their curriculum to equip students with knowledge and skills in food and beverage. Each subject has specific learning outcomes aimed at preparing graduates for industry needs. One key subject covers food and beverage service, including service procedures, traditional Indonesian service techniques, various service types, and standard operating procedures. Students are also introduced to the Sequence of Service as a core service skill.

Sequence of Service is part of the learning outcomes for Phase F Culinary students. It helps students understand and carry out food service procedures based on industry standards. They are expected to perform service activities from welcoming guests to closing with professionalism, good communication, and accuracy. At SMKN 8 Surabaya, students' understanding of this topic remains low due to limited learning resources. Textbooks are outdated, limited in number, available only in the library, printed in black and white, and lack illustrations or supporting media.

To address this issue, more interactive and accessible learning materials are needed. The use of multimedia such as practice videos, audio, and interactive quizzes can improve learning outcomes. Technology provides flexible digital materials that can be accessed through various devices and supported by visual and audio content. One appropriate form is the e-module.

E-modules offer flexibility for students to learn independently anytime and anywhere. They are visually appealing and enriched with multimedia to support learning (Cahyanto & Afifulloh, 2020). Their electronic format removes the need for printed books. A recommended platform is Articulate Storyline, which is user-friendly, similar to PowerPoint (Nabilah et al., 2020), and equipped with features to add videos, audio, and quizzes. The final product can be accessed offline (Septiani et al., 2021).

The aim of this study is to create an e-module through the use of Articulate Storyline 360 to present food and beverage service material through multimedia and interactive questions that can be accessed without internet. These features are expected to improve student understanding. In addition, the school policy at SMKN 8 Surabaya that allows mobile phone use in class supports access to these materials. These considerations form the basis of the research titled "Development of a Sequence of Service E-Module Based on Articulate Storyline 360 for Phase F Students of Culinary Vocational High School".

RESEARCH METHODS

The approach utilized in this research is based on the Research and Development (R&D) with the aim of producing a learning product while also testing its validity and practicality. The researcher only carried out three stages of the Thiagarajan et al. (1974), development model, namely the define, design, and develop stages. Meanwhile, the disseminate stage was not continued due to time constraints.

The object of this research is an e-module containing *Sequence of Service* material for Phase F students, developed using the Articulate Storyline 360 platform. This interactive e-module integrates multimedia elements such as images, audio, and supporting videos to enhance the learning experience. The research will be conducted at SMKN 8 Surabaya, located at Jl. Kamboja No.18, Ketabang, Kec. Genteng, Surabaya, East Java 60272.

Research data will be collected using a semi-open questionnaire distributed to subject matter experts, media experts, and students. This questionnaire evaluates the content feasibility, visual design of the e-module, and student responses to its use. The semi-open format allows respondents to provide detailed feedback and suggestions, while assessments are measured using a five-point Likert scale (Mahmud, 2022).

Table 1. Expert Validation Scale

Score	Assessment Criteria
5	Very Feasible
4	Feasible
3	Fairly Feasible
2	Less Feasible
1	Not Feasible

The scores given by the validators are calculated using the following formula:

$$\text{Presentase} = \frac{\text{Jumlah Skor}}{\text{Skor Tinggi}} \times 100\%$$

The resulting percentage is then interpreted into product feasibility categories. The percentage range commonly used for interpretation is as follows:

Table 2. Score Interpretation Criteria

Percentage Range	Feasibility Category
81-100%	Very Feasible
61-80%	Feasible
41-60%	Fairly Feasible
21-40%	Less Feasible
0-20%	Not Feasible

The data analysis technique is carried out to assess both the feasibility of the e-module and student responses, through two main stages: expert validation and student questionnaire analysis.

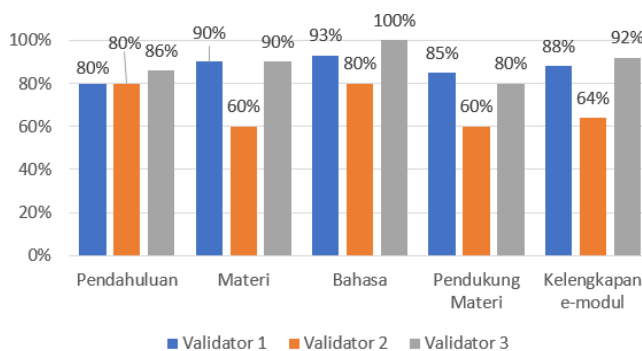
RESULTS AND DISCUSSION

This study produced a learning medium in the form of a *Sequence of Service* e-module for Phase F culinary students at vocational high schools (SMK), developed using the Articulate Storyline 360 application over a period of three months through several stages of revision. The e-module consists of 61 pages and can be accessed online via <https://tinyurl.com/SequenceOfService> or downloaded for offline use through a Google Drive link.

Material Feasibility

The material validation stage for this e-module was carried out by three experts serving as validators. The validation process was conducted by filling out an assessment instrument sheet adapted from previous research and first reviewed by the academic supervisor. Each validator provided assessments by marking (✓) the appropriate answer column.

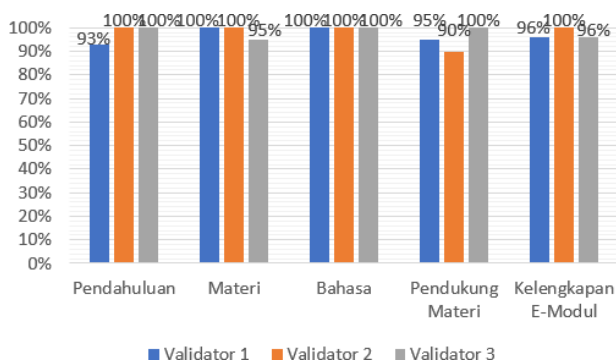
The assessment instrument used a 1–5 Likert scale with five main components: the feasibility of the introduction section, the relevance of the content, the accuracy of language use, the completeness of supporting components, and the overall quality of the e-module. The material validation data from the first stage is shown in Figure 1.



Picture 1. Stage 1 Material Validation Diagram

The results of the first stage of validation for the *Sequence of Service* e-module showed good average scores across all aspects. The introduction, content, language, supporting components, and completeness of the e-module received varying scores from the validators, with the language aspect

achieving the highest score of up to 100%. Although there were differences in individual scores, the overall results indicated that the e-module is considered feasible for use.



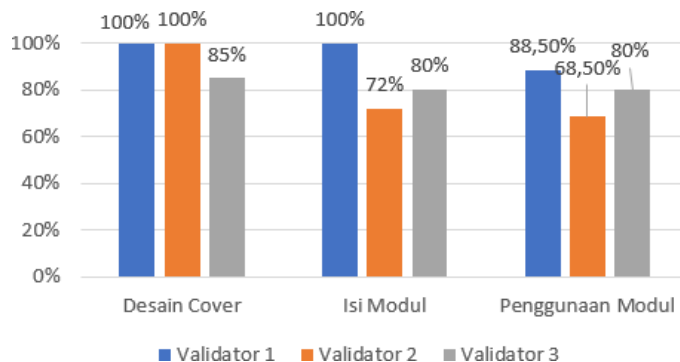
Picture 2. Stage 2 Material Validation Diagram

The findings from the second phase of validation revealed a notable improvement in the Sequence of Service e-module. Most evaluation criteria received exceptionally high marks. The introductory section obtained scores ranging from 93% to 100%, while both content and language aspects achieved perfect scores of 100% from all expert validators. Similarly, the supporting materials were rated between 90% and 100%, and the completeness aspect of the e-module scored between 96% and 100%.

Referring to the classification by Mahmud (2022), the results show that every aspect of the e-module's content has fulfilled the required feasibility standards and is suitable for use in the learning process to achieve optimal outcomes. The successive validation stages highlight the importance of incorporating expert suggestions, which significantly contributed to enhancing the e-module's quality prior to its implementation with students.

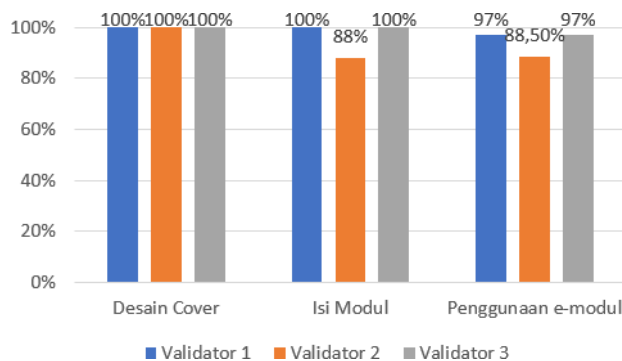
Media Feasibility

The media validation was carried out by three experts in the field, utilizing an evaluation instrument adapted from prior research. Each expert completed the assessment by selecting responses on a 5-point Likert scale, indicating their judgment with a check mark (✓) in the corresponding column. The evaluation encompassed three key components: the appropriateness of the cover design, the quality of the content, and the practicality of the e-module. This media validation activity was carried out in two stages.



Picture 3. Stage 1 Media Validation Diagram

The results of the first stage of media validation showed that the cover design aspect received scores ranging from 85% to 100%, with two validators giving the maximum score. For the module content aspect, the scores varied between 72% and 100%, while the usability aspect of the module received scores ranging from 68.5% to 88.5%.



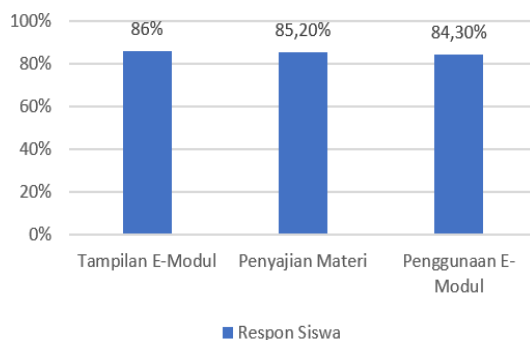
Picture 4. Stage 2 Media Validation Diagram

The results of the second stage of media validation showed a significant improvement. The cover design aspect received a perfect score of 100% from all validators. For the module content, scores ranged from 88% to 100%, while the usability aspect of the e-module received evaluations between 88.5% and 97%.

Overall, the average media validation score increased from the first to the second stage, with all aspects ultimately rated as “highly feasible.” This indicates that the *Sequence of Service* e-module meets visual, technical, and functional standards. With an attractive design, supportive content, and user-friendly navigation, the e-module is considered highly suitable for enhancing interactive and engaging learning activities (Najuah et al., 2020).

Student Responses

Student responses to the *Sequence of Service* e-module were obtained through a limited trial conducted during the development stage. This activity involved 31 Grade XI Culinary students. The data collection process was carried out online, where students were asked to complete a questionnaire via Google Form after using the e-module. The collected data was then analyzed to determine the extent of student acceptance toward the developed learning media.



Picture 5. Student Response Results

The trial results showed a positive response from students toward the *Sequence of Service* e-module. The appearance aspect of the e-module received a score of 86%, the material presentation scored 85.2%, and the effectiveness of the e-module in terms of usability was given a score at 84.3%.

Based on the evaluation of three aspects, namely visual appearance, material presentation, and usability, it can be concluded that the *Sequence of Service* e-module developed using Articulate Storyline 360 received a highly positive response from students. This reflects that the e-module is not only visually appealing but also effective in delivering learning content and easy to operate.

Moreover, the findings from content validation, media expert reviews, and student feedback indicate that the *Sequence of Service* e-module is appropriate for implementation as an instructional tool in vocational education. It fulfills the criteria of high-quality content, appealing visual design, and user-friendly functionality aligned with students' learning requirements.

CONCLUSIONS

The conclusion of this research and development indicates that the interactive Sequence of Service e-module developed with Articulate Storyline 360 can be accessed online via the Chrome browser or offline through a downloadable application from Google Drive. Validation by content experts confirms that the material is appropriate for learning needs and feasible for use, while validation by media experts shows that the e-module meets the required feasibility standards. Furthermore, limited trials with student responses demonstrate that the e-module is rated excellent as a digital learning resource, effectively increasing students' interest and engagement in the learning process.

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