

Development and Formative Evaluation of a Flipbook-Based Digital Module for Basic Guidance and Counseling

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Keywords

ADDIE; digital teaching module; flipbook; guidance and counseling; higher education.

Abstract

Digital teaching materials may provide greater visual support, flexibility, and instructional guidance than conventional materials in counselor education. This study aimed to develop a flipbook-based digital teaching module for the Basic Guidance and Counseling course and obtain preliminary evidence of its content feasibility, instructional appropriateness, and lecturer-perceived usability. The study used an ADDIE-informed development research design comprising analysis, design, development, limited implementation, and formative evaluation. The module included learning outcomes, concept maps, instructional content, summaries, assignments, multimedia-supported explanations, navigation features, and references. Formative evaluation involved three guidance and counseling experts and three lecturers. Data were collected using an expert validation sheet, lecturer usability questionnaire, open-ended questionnaire, and focus group discussion guide. Quantitative ratings were analyzed descriptively using a five-point scale, while qualitative comments were categorized and used to revise the module. The mean expert rating was 3.82, indicating that the module was considered feasible according to the predetermined assessment criteria. Lecturer ratings were 3.72 during individual review and 4.14 during limited usability evaluation, while the structured rating obtained following the focus group discussion was 4.66. Feedback resulted in revisions to the module's language, illustrations, navigation, and implementation guidance. These findings provide preliminary evidence that the module is feasible in content and instructional organization and is perceived by lecturers as usable for Basic Guidance and Counseling instruction. Further evaluation involving students and classroom implementation is required to assess student usability and learning outcomes.

INTRODUCTION

Basic Guidance and Counseling is a foundational course in counselor education because it introduces students to the concepts, functions, principles, and professional roles of guidance and counseling services. The course requires teaching materials that do more than present definitions. Students need a structured learning resource that can guide independent study, clarify the relationship among concepts, and help them connect theoretical content with future professional practice. In the

digital learning environment, this need becomes more urgent because lecturers are expected to design learning activities that remain meaningful across face-to-face, blended, and online delivery modes (Rapanta et al., 2020; Senadheera et al., 2024).

The urgency of strengthening learning resources in this course is consistent with post-pandemic higher education literature, which shows that meaningful online and blended instruction requires teacher presence, clear learning activities, and well-structured resources rather than the simple transfer of face-to-face materials into digital platforms. Systematic evidence on online teaching also indicates that instructional clarity, interaction design, and learner support are central variables in determining the quality of digital learning experiences (Martin et al., 2020; Rapanta et al., 2020).

Digital transformation in higher education has changed the way lecturers prepare and distribute learning materials. Digital media can strengthen access, flexibility, and interaction when the instructional design is coherent with course outcomes and learner needs (Bond et al., 2018). A digital module is therefore not merely an electronic copy of a printed handout. It should contain a clear learning sequence, concise explanations, navigable sections, and media elements that support comprehension. Multimedia learning theory also emphasizes that students process information more effectively when verbal and visual materials are organized in ways that reduce unnecessary cognitive load and strengthen meaningful learning (Mayer, 2021).

At the institutional level, digital transformation should be understood as a pedagogical and organizational change process, not only as the adoption of devices or learning applications. Studies on higher education digitalization emphasize that digital media become educationally valuable when they are integrated with curriculum goals, lecturer competence, infrastructure readiness, and students' actual learning practices (Bond et al., 2018; Castro Benavides et al., 2020).

Flipbook-based e-modules offer a relevant format for this purpose because they combine text, images, page navigation, audio, video, and multimedia components in a book-like digital interface. Recent development studies show that flipbook modules can support self-learning, improve practicality, and provide valid digital learning resources across different subject areas (Humairah & Wahyuni, 2024; Rahmiati et al., 2023; Yusmar et al., 2024). Other evidence also shows that e-modules can increase self-efficacy, motivation, and learning outcomes when they are designed for independent and collaborative learning (Delita et al., 2022). However, findings from general instructional settings cannot be transferred directly to counselor education because guidance and counseling learning involves distinctive competencies related to service concepts, counselor roles, ethical communication, and helping procedures. Consequently, digital modules in this field should not only provide attractive multimedia features but also facilitate professional reasoning and procedural understanding. In addition, technology use in guidance and counseling should consider user experience, communication culture, counselor competence, and procedural clarity (Nadya et al., 2023). Therefore, the development of digital modules for counselor education requires more specific considerations than those applied in general instructional media development.

Recent empirical studies strengthen this assumption by showing that flipbook-based e-modules can improve validity, practicality, learner independence, and creativity when their content structure, navigation, visual elements, and assessment components are developed through systematic instructional design. These findings are relevant for the present study because the module is expected to function as a guided learning environment rather than as a static digital textbook (Humairah & Wahyuni, 2024; Rahmiati et al., 2023; Yusmar et al., 2024).

Preliminary observation and interviews in the Guidance and Counseling Study Program at Universitas Muhammadiyah Sumatera Utara showed that students in the odd semester of the 2023/2024 academic year still experienced difficulties in using the existing teaching module for the Basic Guidance and Counseling course. The module referred to in this study was the lecturer-prepared course module used as the main teaching material for the Basic Guidance and Counseling course before the flipbook

product was developed. It mainly presented written explanations and did not yet provide sufficient visual organization, embedded audio or video support, interactive navigation, or clear learning guidance for independent study. Students considered the module less attractive and frequently asked repeated questions because they did not fully understand the content, especially when lecturers did not provide direct face-to-face explanation. This condition indicates a gap between the available teaching material and the learning support required by students in a flexible learning context.

This local problem is also consistent with broader evidence on digital learning readiness. Higher education lecturers and students may have access to digital platforms, but access does not automatically produce effective learning when pedagogical readiness, accessibility, affordability, and flexibility are weak. In the Indonesian context, emergency remote teaching research shows that simplicity, accessibility, affordability, flexibility, and empathy are important design principles for digital learning implementation (Cahyadi et al., 2021; Scherer et al., 2021).

Although previous studies have developed flipbook-based modules in science, vocational education, and other instructional contexts, studies that specifically validate a flipbook-based digital module for Basic Guidance and Counseling in higher education remain limited. This study addresses that gap by developing and validating a digital teaching module using the ADDIE model. The objective of this study is to determine the feasibility and usability of a flipbook-based digital teaching module for the Basic Guidance and Counseling course based on expert judgment, lecturer assessment, limited field testing, statistical agreement testing, and focus group discussion.

Therefore, the contribution of this study lies in adapting flipbook-based module development to the specific epistemic character of counselor education. E-module research shows that digital learning resources can support self-efficacy, motivation, learning outcomes, and collaborative learning when they are intentionally designed for student autonomy, while educational technology reviews emphasize that student engagement depends on learning tasks, interaction patterns, and meaningful use of media (Bedenlier et al., 2020; Delita et al., 2022).

METHODS

Research Design and Setting

This study used an ADDIE-informed development research design to develop and conduct a formative evaluation of a flipbook-based digital teaching module for the Basic Guidance and Counseling course. The ADDIE framework comprises analysis, design, development, implementation, and evaluation and provides a systematic sequence for identifying learning needs, designing instructional materials, developing a prototype, conducting preliminary implementation, and revising the product based on evaluation findings (Branch, 2009; Senadheera et al., 2024). The study was conducted in the Guidance and Counseling Study Program, Faculty of Teacher Training and Education, Universitas Muhammadiyah Sumatera Utara. The study focused on obtaining preliminary evidence regarding the module's content feasibility, instructional organization, media presentation, and lecturer-perceived usability. Student-based classroom implementation and evaluation of learning outcomes were outside the scope of this development stage.

The choice of ADDIE is methodologically appropriate because product development in digital learning requires a visible chain between needs analysis, instructional design decisions, prototype construction, implementation, and formative evaluation. Current reviews of instructional design models in higher education also indicate that systematic models remain useful when researchers adapt them to institutional constraints, user characteristics, and revision cycles instead of applying them mechanically (Branch, 2009; Senadheera et al., 2024; Xie et al., 2021).

Product Description

The product developed in this study was a flipbook-based digital teaching module for the Basic Guidance and Counseling course. The module was not treated as a general e-book or a simple PDF

conversion, but as a structured teaching module containing a cover page, course identity, learning outcomes, concept map, learning objectives, learning materials, summaries, assignments or evaluation items, audio and video-supported explanations, navigation buttons, and references. The module content was first organized according to the course learning outcomes and then converted into a flipbook format using Flipbook PDF Professional so that students and lecturers could access the material through a book-like digital display.

Development Procedure

The development procedure followed five ADDIE stages. The analysis stage identified student difficulties and limitations of the previous module through observation and interviews. The design stage mapped learning outcomes, material sequence, layout, navigation, and multimedia components. The development stage produced the prototype by preparing written material, visual elements, audio or video links, and flipbook navigation. The implementation stage involved expert validation, individual lecturer testing, limited field testing, and focus group discussion. The evaluation stage used quantitative scores and qualitative comments to revise language, illustrations, navigation clarity, and implementation procedures before the final product was prepared.

Participants

The participants consisted of three guidance and counseling experts and three guidance and counseling lecturers. The experts assessed content feasibility and construct appropriateness, while the lecturers assessed usability and implementation clarity through individual testing, limited field testing, and focus group discussion. The FGD was conducted on February 20 and 21, 2024, through Zoom Meeting. Students were the ultimate target users of the module, but they were not involved as respondents at this formative stage because the study focused on validating content, construction, media presentation, and lecturer usability before wider classroom implementation. Therefore, the findings should be interpreted as evidence of expert and lecturer feasibility, not as direct evidence that the module has already solved students' learning difficulties. Student-based effectiveness testing is recommended for the next research stage.

Instrument

The instruments consisted of an expert validation sheet, lecturer usability questionnaire, open-ended questionnaire, and FGD guide. The instruments were constructed by the researchers based on the ADDIE evaluation stages, module feasibility indicators, multimedia learning principles, and usability dimensions relevant to digital learning products. The expert validation sheet assessed content accuracy, relevance to Basic Guidance and Counseling course outcomes, construct organization, conceptual sequence, language clarity, media presentation, accessibility, and suitability of examples. The lecturer usability questionnaire assessed clarity of instructions, ease of navigation, readability, practicality for teaching, suitability for independent learning, media support, and implementation readiness. Both structured instruments used a five-point Likert scale, ranging from 1 (very poor/very inappropriate) to 5 (very good/very appropriate). Mean scores were interpreted using interval categories: 1.00-1.80 very poor/not feasible, 1.81-2.60 poor/less feasible, 2.61-3.40 fair, 3.41-4.20 good/feasible, and 4.21-5.00 excellent/highly feasible. The instrument items were reviewed for content and face validity before data collection by checking their alignment with the product objectives, course characteristics, and assessment indicators. The open-ended questionnaire was used to collect written comments on strengths, weaknesses, readability, visual presentation, and revision needs. The FGD guide was used to explore lecturer judgments regarding content clarity, media display, accessibility, implementation procedures, and readiness for wider use.

Data Analysis

Quantitative data were analyzed using mean scores and non-parametric chi-square tests at the 0.05 significance level. Qualitative data from open-ended responses and FGD were reduced, categorized, and

used as the basis for final product revision. This combination of quantitative and qualitative evidence was used to strengthen the formative evaluation of the product (Cohen et al., 2017).

The use of quantitative validation, open-ended responses, and FGD is important because feasibility assessment should capture both measurable agreement and contextual explanation. In educational product research, mixed evidence helps researchers identify whether a product is valid in content, usable in procedure, and readable for intended users; similarly, usability studies emphasize effectiveness, efficiency, satisfaction, learnability, and user-centered evaluation as core dimensions of digital product assessment (Cohen et al., 2017; Johnson et al., 2022).

RESULTS AND DISCUSSIONS

The development process produced a flipbook-based digital teaching module for the Basic Guidance and Counseling course. The final product was designed as a structured course module rather than a static digital textbook. It presented learning units through course identity, learning outcomes, concept maps, explanations of basic guidance and counseling concepts, summaries, assignments, audio or video-supported material, and book-like navigation. The ADDIE stages were used to ensure that the product was not developed as a visual redesign only, but as a teaching resource aligned with the learning needs identified during the preliminary assessment. Table 1 summarizes the development procedure and outputs, while Figure 1 provides sample views of the prototype and revised implementation display.

To make the development process transparent, the following table presents the relationship between each ADDIE stage, the main activity, the product output, and the evaluation indicator used in this study.

Table 1. <ADDIE-based development procedure and outputs>

ADDIE stage	Main activity	Product output	Evaluation indicator
Analysis	Need assessment through observation and interviews in the Basic Guidance and Counseling course	Problem map and learning material needs	Students' difficulty with the existing module and need for clearer digital material
Design	Mapping course outcomes, learning sequence, module structure, and media components	Module blueprint and content framework	Alignment between learning outcomes, material, and media format
Development	Preparing module content, visual layout, images, and flipbook format	Prototype of the digital teaching module	Content accuracy, construct clarity, and media presentation
Implementation	Expert validation, individual lecturer test, and limited field test	Validated module draft	Feasibility and usability scores
Evaluation	Open-ended review and FGD-based revision	Final revised module	Practicality, language clarity, and implementation readiness

Table 1 shows that the product was developed through a sequential and evaluative process. The analysis stage became the basis for identifying students' difficulties, while the design and development stages translated those needs into a module blueprint and prototype. The implementation and evaluation stages then ensured that the prototype was reviewed, revised, and prepared for further testing.

In addition to the procedural summary, visual evidence of the product is presented to show how the digital module changed from a prototype into a usable learning resource. The following figure displays examples of the module interface and its use during learning activities.

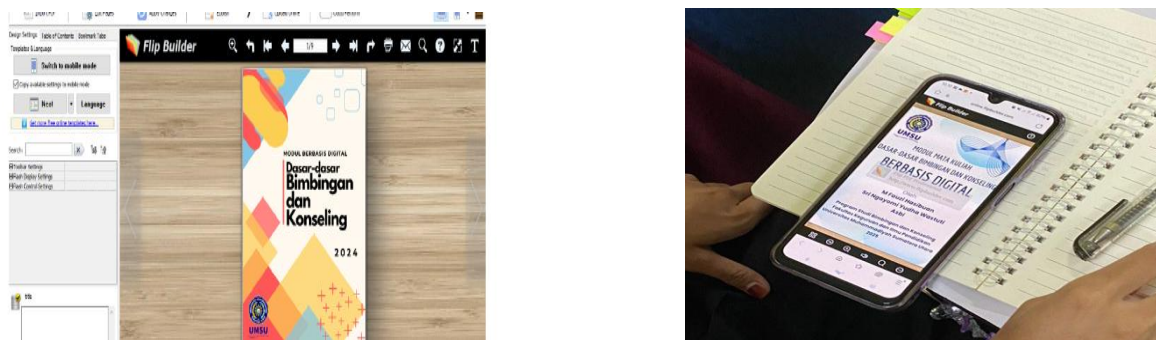


Figure 1. <Sample views of the flipbook module prototype and revised implementation display>

The prototype view shows the module layout in Flipbook PDF Professional, while the revised implementation view shows the module accessed through a smartphone during course activities. These images indicate that the product was revised not only in written content, but also in display, navigation, and practical accessibility.

Figure 1 illustrates that the module was designed for flexible access through digital devices. The prototype display confirms the use of Flipbook PDF Professional as the development platform, while the implementation display indicates that the material could be accessed through smartphones during course activities. This finding supports the purpose of the product as a practical resource for both independent and classroom-based learning.

Expert validation showed that the module had an overall mean score of 3.82, indicating that the product was feasible for use by lecturers in higher education. The experts recommended simplifying several sentences and improving the language of some material sections so students could read the module more easily. The individual lecturer test produced a mean score of 3.72, which indicated that the module was generally good and could be implemented by lecturers after minor revision. The limited field test produced a higher mean score of 4.14, indicating that the revised module was usable and procedurally clear for instructional practice. The FGD produced the highest mean score, 4.66, showing that lecturers considered the module highly appropriate after the final revision process. Table 2 presents the quantitative summary of product validation and usability testing.

After the module had been developed and revised, feasibility and usability data were summarized to show the strength of the product at each assessment stage. Table 2 presents the mean score, category, and interpretation for expert validation, individual testing, limited field testing, and FGD.

Table 2. <Product feasibility and usability results>

Assessment stage	Participants	Mean score	Category	Interpretation
Expert validation	Three guidance and counseling experts	3.82	Feasible	The module met content and construct feasibility criteria.
Individual lecturer test	Three guidance and counseling lecturers	3.72	Good	The module could be used by lecturers with minor language and presentation revisions.
Limited field test	Guidance and counseling lecturers	4.14	Good	The revised module showed strong usability for instructional implementation.

Focus group discussion	Three lecturers	4.66	Excellent	The final revision was considered highly usable and ready for wider testing.
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Table 2 indicates a gradual improvement in the assessment results, from 3.72 in the individual lecturer test to 4.66 in the FGD. This pattern suggests that the revisions made after expert and lecturer feedback strengthened the clarity, presentation, and practical usability of the module. The increasing scores also show that the product became more ready for instructional use after each formative evaluation stage.

To complement the score-based results, the study also documented the type of data obtained from each instrument. Table 3 explains how each instrument contributed to the revision and validation process.

Table 3. <Summary of data generated from each instrument>

Instrument	Data generated	Main finding	Use for revision
Expert validation sheet	Likert-scale ratings and written notes from three guidance and counseling experts.	The mean score was 3.82, categorized as feasible. The main concern was language simplicity and construct clarity.	The material sequence, terminology, and several explanatory sentences were revised.
Lecturer usability questionnaire	Likert-scale ratings from three guidance and counseling lecturers in individual and limited field testing.	The individual lecturer test produced a mean score of 3.72, while the limited field test produced 4.14. The product was considered usable with minor revisions.	Instructions, navigation explanation, and several visual elements were clarified.
Open-ended questionnaire	Qualitative comments on strengths, weaknesses, readability, media display, and implementation needs.	Respondents appreciated the structured display and multimedia support, but recommended simpler language and clearer learning directions.	Language was simplified, several terms were adjusted, and user guidance was strengthened.
FGD guide	Discussion notes and lecturer agreement regarding final product readiness.	The FGD produced a mean score of 4.66, categorized as excellent. Lecturers considered the final revision ready for broader classroom trial.	The final revision focused on implementation readiness and consistency between content, media, and lecturer use.

Table 3 shows that each instrument had a different function in the formative evaluation process. The validation sheet and lecturer questionnaire provided measurable evidence, while the open-ended questionnaire and FGD explained why certain revisions were necessary. Therefore, the final product was

not based only on numerical feasibility scores, but also on user-centered feedback from experts and lecturers.

The chi-square test was applied to the categorical rating data generated from the structured expert validation sheet and lecturer usability questionnaire. The expert validation sheet produced a chi-square value of 42.82, which was higher than the chi-square table value of 25.00 at the 0.05 significance level. The lecturer usability questionnaire produced a chi-square value of 6.00, which was slightly higher than the chi-square table value of 5.99. These results indicate significant agreement among assessors regarding product feasibility and usability. The chi-square values should therefore be interpreted as evidence of agreement within the expert and lecturer assessment instruments, not as evidence of student learning effectiveness. Table 4 presents the statistical test summary.

Statistical agreement was further examined using chi-square analysis. Table 4 presents the chi-square count, table value, significance level, decision, and meaning of the expert and lecturer assessments.

Table 4. <Chi-square test summary>

Assessment source	Chi-square count	Chi-square table	Significance level	Decision	Meaning
Expert assessment	42.82	25.00	0.05	χ^2 count > χ^2 table	There was significant agreement on product feasibility.
Lecturer assessment	6.00	5.99	0.05	χ^2 count > χ^2 table	There was significant agreement on product usability.

Table 4 confirms that both chi-square count values were higher than their respective table values. This means that the assessment results did not occur randomly and that there was significant agreement among evaluators regarding the feasibility and usability of the module. These results strengthen the descriptive findings reported in Tables 2 and 3.

Qualitative findings from the open-ended questionnaire and FGD reinforced the quantitative results. The open-ended questionnaire generated comments on four main areas: content relevance, language clarity, media presentation, and implementation practicality. Experts and lecturers generally agreed that the module structure was relevant to the Basic Guidance and Counseling course and that the flipbook format could make the material more accessible than the previous module. However, they also noted that several sentences were too long, some terms needed clearer explanation, and several visual elements needed stronger alignment with the material. The FGD generated a final agreement that the revised module was ready for broader classroom trial after language simplification, improved visual support, clearer user instructions, and adjustment of several illustrations. These revisions were important because a digital module must be easy to use and easy to understand, not only visually attractive.

The revision emphasis on language simplification and clearer visual support is theoretically important. Cognitive theory of multimedia learning argues that learning materials should manage cognitive load by coordinating verbal and visual information, while evidence maps on educational technology in higher education show that engagement improves when digital resources are connected to active learning and not used merely as decorative media (Bond et al., 2020; Mayer, 2021).

The findings suggest that the ADDIE model was useful for guiding a coherent development process. The analysis stage helped identify specific instructional problems, while the design and development stages translated those problems into a structured digital product. This result is consistent with the view that instructional design models can produce more reliable digital learning processes when the model is

selected according to the course context, resources, and development purpose (Senadheera et al., 2024). The positive feasibility score also supports Branch (2009) argument that development products require iterative evaluation before implementation.

The feasibility and usability results also align with previous studies on flipbook-based and digital modules. Yusmar et al. (2024) found that flipbook-based e-modules developed with ADDIE could facilitate self-learning when they were valid, practical, and organized around clear module characteristics. Humairah and Wahyuni (2024) reported that digital flipbook modules could be valid, practical, and effective when they integrated learning objectives, media, and assessment instruments. Rahmiati et al. (2023) also showed that flipbook-based e-modules could improve learning creativity in higher education. The present study extends these findings into the field of guidance and counseling education, where the product must support conceptual understanding and professional role preparation.

The use of multimedia features in the module is important because Basic Guidance and Counseling contains abstract concepts that require examples, visual organization, and contextual explanation. The inclusion of images and video-supported content can help students process material through verbal and visual channels when the media is integrated meaningfully rather than used as decoration (Mayer, 2021). From the counseling perspective, the module also needs to maintain clear communication procedures and user-oriented design. (Nadya et al., 2023) emphasize that technology in guidance and counseling should pay attention to user experience, communication processes, technical readiness, and service quality. This principle is relevant because a digital module for counselor education should strengthen professional understanding, not merely digitize printed material.

For guidance and counseling education, digital module design also needs to consider professional communication, ethical use of technology, and the preparation of students for technology-mediated counseling contexts. Literature on counseling technology stresses the need for user experience, service quality, and counselor competence, while broader reviews of artificial intelligence and educational technology warn that pedagogical, ethical, and human-centered dimensions must remain visible in technology-enhanced higher education (Nadya et al., 2023; Zawacki-Richter et al., 2019).

This study has several limitations. First, the implementation stage was limited to expert validation, individual lecturer testing, limited field testing, and FGD with lecturers. Although the research problem originated from students' difficulty in understanding the previous module, this study did not directly measure student learning outcomes, learning motivation, independent learning behavior, or long-term effectiveness. Second, the number of assessors was small because the study prioritized formative product validation before wider implementation. Third, the study was conducted in one guidance and counseling program, so the product still requires broader testing in different counselor education contexts. Further research should involve students as respondents, compare learning outcomes before and after implementation, and examine whether the module improves independent learning and conceptual mastery in Basic Guidance and Counseling.

These limitations suggest that the next stage should move from formative validation to effectiveness testing with a larger student sample and more diverse higher education settings. Research on digital learning spaces and digital transformation in higher education indicates that sustainable innovation requires evidence about learning processes, institutional integration, and user experience across contexts; consequently, future studies should examine learning outcomes, independent learning behavior, and lecturer implementation consistency after wider adoption (Bygstad et al., 2022; Castro Benavides et al., 2020).

CONCLUSIONS

The flipbook-based digital teaching module developed for the Basic Guidance and Counseling course was found to be feasible and usable based on expert validation, lecturer assessment, limited field testing, chi-square agreement testing, open-ended responses, and FGD. The expert mean score of 3.82, individual

lecturer test score of 3.72, limited field test score of 4.14, and FGD score of 4.66 indicate that the module met the expected criteria for content feasibility, construct clarity, readability, media presentation, and instructional usability from the perspective of experts and lecturers. The study contributes to counselor education by providing a validated digital teaching resource that supports lecturers in delivering foundational guidance and counseling material through a more flexible and structured format. However, wider implementation and effectiveness testing with students are still needed to determine whether the module improves students' learning outcomes, independent learning, and understanding of Basic Guidance and Counseling concepts.

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AUTHOR CONTRIBUTION STATEMENT

M Fauzi Hasibuan conceptualized the study, designed the module, collected the data, and prepared the initial manuscript. Sri Ngayomi Yudha Wastuti contributed to instrument development, expert validation coordination, and manuscript improvement. Asbi Asbi contributed to data analysis, product revision, and final manuscript review. All authors approved the final version of the manuscript.

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