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Evaluating E-Module KPSP: A Research and Development Approach

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ABSTRACT

Introduction: Media and learning resources are part of the components that influence learning. Utilizing and empowering e-modules to support learning is necessary, not only to increase the effectiveness and quality of education but more importantly to improve mastery of the material for both lecturers and students.
Objective: The purpose of this research is to design learning media in the form of KPSP e-modules, which are used to support the learning process so as to increase student attractiveness and student understanding.
Method: This study uses a Research and Development (R&D) procedure. The subjects of this study were 58 Midwifery Diploma students for the 2021/2022 academic year.
Result: The content aspect of the KPSP e-module is rated as "Very Feasible" the content aspect of the KPSP e-module is rated as "Very Feasible" in 91%. The media feasibility analysis portrays the KPSP e-module as a highly viable and effective learning tool. The percentage of media suitability as a whole is getting an average score of 85%, including the very feasible category.
Conclusion: Based on the results of the research and discussion, it can be concluded that the average overall student perception results are 89% in the very good category. This indicates that the electronic module (e-module) is good and suitable for use as a distance learning medium in courses on caring for neonates, infants and toddlers.

Keywords: child development, e-modul, kpsp, learning media

Introduction

Media and learning resources are part of the components that influence learning. Utilizing and empowering e-modules to support learning is necessary, not only to increase the effectiveness and quality of education but more importantly to improve mastery of the

material for both lecturers and students. Sorting learning media according to the material is a meaningful step to present quality teaching and learning activities and facilitate the delivery of material. Lecturers are expected to be able to select and develop appropriate learning media to optimize student competence. Therefore we need a medium that can attract students to absorb the material. One of the media developed is an electronic module (e-module) (Muhammad H, 2017; Mustofa Abi Hamid, Rahmi Ramdhani, et. al., 2020).

It is hoped that with media in the form of e-modules students can capture information following learning objectives. this is to the theory that the more senses that are used to perceive something, the more and the clearer the understanding obtained. STIKes Muhammadiyah Ciamis is one of the tertiary institutions in West Java, which includes the D3 Midwifery Study Program. So far, the learning process is still dominated by printed learning media (Fauzi et al., 2021). The current conditions (covid-19) require lecturers to be more creative in preparing learning tools, one of which is media. In the learning process using blended learning means collaborating face-to-face and online learning.

The result of B Galvin, (2011) recommend that learning be collaborative between face-to-face and online because it is very compatible with the tendency of learning culture in tertiary institutions. In designing a lecture with blended learning there is an expression "bother at first, easy later", the meaning of this expression is that the most important thing in the application of blended learning is the preparation of learning tools to support the continuity and smoothness of subsequent learning so that blended learning can improve quality, not even lower, quality compared to face-to-face lectures. Considering that the application of blended learning requires student independence in learning, the development of priority learning tools is e-modules.

Thus, learning media in the form of e-modules were developed which can be used for independent or conventional learning. The developed e-module is one of the study materials in the Neonatal, Infant and Toddler Care course, namely the Developmental Pre-Screening Questionnaire (KPSP). This KPSP is a questionnaire used to determine normal child development or deviations.

Objective

The purpose of this research is to design learning media in the form of KPSP e-modules, which are used to support the learning process so as to increase student attractiveness and student understanding.

Method

This study uses a Research and Development (R&D) procedure (Martianingtiyas, 2019). Research and development of this learning module aims to determine the feasibility level of the KPSP e-module. The feasibility of the module is determined by two experts, namely media and material experts and several students in the form of a small group test. The e-module was developed using Android Studio software on the MacOS operating system. with reference to the Plomp development model including several phases such as: 1) initial investigation phase; 2) design/design phase; 3) realization/construction phase; 4) test, evaluation and revision

phases; and 5) implementation phase. The subjects of this study were 58 D3 Midwifery students at STIKes Muhammadiyah Ciamis for the 2021/2022 academic year.

Then the yield percentage formula can be calculated using the following formula:

Result = $\frac{total\ skor\ yang\ diperoleh}{skor\ maksimum}$ x 100%

Table 1. Eligibility Category

Score (%)	Eligibility Category
< 21%	Very unworthy
21 – 40%	Not feasible
41 – 60%	Pretty decent
61 – 80%	Worthy
81 – 100%	Very worth it

Result

This research produces an android-based application program. System testing uses the Android Oreo OS platform with 2GB RAM capacity, 16GB internal memory, minimum screen size of 5 inches. This application contains text and images and is published in the form of a play store which can be accessed by various devices with the Android OS platform. Here is the resulting system view:

Figure 1. App Initial View

Figure 2. Contents View

Feasibility of material aspects

Based on the results of the validation test by material experts in the form of assessment results.

Table 2. Material feasibility analysis

Assessment Aspects	Percentage (%)	Eligibility Category
Content	91	Very worth it
Presentation	90	Very worth it
Language	90	Very worth it
Average	**90**	Very worth it

Based on the table above, we can see that for the overall material eligibility percentage, which obtains an average score of 90%, it falls under the category of "very worth it." Therefore, the KPSP e-module is highly suitable for use as a learning medium from the material aspect.

Media Aspect eligibility

Based on the validation results by media expert in the form of assessments.

Table 3. Media feasibility analysis

Assessment Aspects	Precentage (%)	Eligibility Category
Screen Design Appearance	83	Highly Appropriate
User-Friendliness	90	Highly Appropriate
Consistency	80	Appropriate
Utility	80	Appropriate
Graphical Aspects	92	Highly Appropriate
Average	**85**	Highly Appropriate

Based on the table above, we can see that the percentage of media suitability as a whole is getting an average score of 85%, including the very feasible category (Highly Appropriate). So, the KPSP e-module is used as a learning medium from the material aspect.

Test result on students

Table 4. Test result on students

Statement	Very Good	Good	Enough	Not Good	Extremely Inadequate	Total
You are enthusiastic about learning this KPSP e-module.	17 (29%)	34 (59%)	7 (12%)	-	-	58 (100%)
The appearance of this KPSP e-module is attractive.	17 (29%)	37 (64%)	4 (7%)	-	-	58 (100%)
The information in this KPSP e-module is clear.	21 (36%)	36 (62%)	1 (2%)	-	-	58 (100%)
The information in this KPSP e-module is easy to understand.	18 (31%)	38 (66%)	2 (3%)	-	-	58 (100%)

The content of this KPSP e-module encourages you to learn more about the KPSP e-module.	18 (31%)	35 (60%)	5 (9%)	-	-	58 (100%)
The KPSP e-module is beneficial for you.	23 (40%)	35 (60%)	-	-	-	58 (100%)
The language in this KPSP e-module is understandable.	16 (28%)	38 (66%)	4 (7%)	-	-	58 (100%)
Overall, this KPSP e-module is satisfying.	17 (29%)	36 (62%)	5 (9%)	-	-	58 (100%)

The results of the trial conducted on students

Table 5. The results of the trial conducted on students

Category	Freq.	Percentage (%)
Very Good	18	31
Good	36	62
Enough	4	7
Not Good	-	-
Extremely Inadequate	-	-
Total	**58**	**100**

Based on the table above, the majority of the trial assessment analysis on students falls into the category 'Good,' with a total of 36 individuals (62%).

Discussion

With a percentage of 91%, the content aspect of the KPSP e-module is rated as "Very Feasible." This indicates that the e-module provides substantial, relevant, and in-depth information related to the discussed topics. The high score in this aspect suggests that the module has good quality content that covers the necessary information for learning (Adnani et al., 2022; Fullerton et al., 2016). With a percentage of 90%, the presentation aspect of the content is also rated as "Very Feasible". This suggests that the KPSP e-module is well-designed visually or presented in a way that facilitates understanding. Good presentation can enhance user engagement and information retention. With a percentage of 90%, the language aspect of the KPSP e-module is rated as "Very Feasible". Good language quality is crucial in the context of learning, and a high score in this aspect indicates that the language used in the e-module is suitable for the target users' understanding levels and facilitates effective communication (Sidebotham et al., 2018).

Based on the research results, it can be concluded that the KPSP e-module is an excellent learning resource. High quality in all aspects (content, presentation, and language) indicates that this e-module can be effectively used as a learning tool in the context of Continuous Professional Development for educators or relevant stakeholders.

The media feasibility analysis portrays the KPSP e-module as a highly viable and effective learning tool. The strengths in user-friendliness and graphics contribute to a positive user experience. While there are areas for improvement, such as consistency and utility, the overall

assessment places the e-module in the "Sangat Layak" category, affirming its capability to effectively support educational objectives. These findings offer valuable guidance for potential enhancements and refinements to further elevate the e-module's overall quality and impact (Darling-Hammond et al., 2020).

The outcomes of this media feasibility analysis not only validate the effectiveness of the KPSP e-module as a learning tool but also contribute meaningfully to the broader discourse on the role of digital media in education (Grassini, 2023). As technology continues to play a pivotal role in shaping the future of learning, research endeavors like this one play a crucial role in guiding the development and implementation of effective educational technologies (Supriadi et al., 2021).

The examination of student feedback on the KPSP e-module yielded insightful findings, as demonstrated in the provided table. The majority of students participated in the trial, and their assessments were distributed across several categories. The largest segment of responses, comprising 62%, fell into the "Baik" (Good) category, indicating that a significant portion of students found the e-module to be satisfactory or even exceeded their expectations. This positive reception is a promising indication of the module's effectiveness in delivering content and engaging learners.

Furthermore, 31% of students rated the e-module as "Sangat Baik" (Very Good), showcasing a notable appreciation for the quality of the educational content or the module's design. While a smaller group of students, 7%, assessed it as "Cukup" (Fair), it's essential to acknowledge that a diverse range of learning preferences and expectations might contribute to this variation in evaluations. Notably, there were no reported instances of the module being rated as "Kurang" (Poor) or "Sangat Kurang" (Very Poor). This absence of negative assessments suggests a generally favorable reception among the trial participants.

The findings from the student questionnaire on the KPSP e-module align with broader research in educational technology, emphasizing the importance of understanding user perceptions and engagement for the success of digital learning tools. Numerous studies underscore the impact of user satisfaction on the effectiveness of e-learning platforms and highlight the need for continuous improvement informed by user feedback.

In a study by Oyetade et al., (2023) on the factors influencing the user experience in e-learning, it was discovered that positive user perceptions significantly contributed to successful learning outcomes. User feedback, particularly in the form of qualitative data, was identified as a crucial element in identifying areas for improvement. The study emphasized the iterative nature of e-learning design, where continuous refinement based on user feedback is integral to enhancing the overall user experience.

Similarly, the research by (Selim Günüç, Emrullah Yiğit, 2023) delves into the relationship between student achievement and the integration of technology in the classroom. The study emphasizes that understanding the user experience is paramount in ensuring technology aligns with educational objectives. Positive user assessments, akin to the "Baik" category in the KPSP e-module study, were found to be linked to increased engagement and, subsequently, positive learning outcomes.

However, both the aforementioned studies and the current research highlight the importance of going beyond quantitative metrics to understand the nuances of user satisfaction. Qualitative feedback provides rich insights into the specific elements contributing to positive evaluations. A study by Arumugam et al., (2022) on student perceptions of e-

learning highlighted the value of qualitative data in uncovering the intricacies of user experiences. It emphasized that a nuanced understanding of student perspectives is critical for tailoring e-learning environments to diverse learner needs.

In the context of the KPSP e-module, a qualitative exploration could involve interviews, focus group discussions, or open-ended survey questions. Analyzing these qualitative responses, as recommended by studies like the one conducted by Oyetade et al., (2023) on the impact of multimedia materials in e-learning, allows researchers to identify not only what aspects are working well but also areas that might need refinement or additional features.

The KPSP e-module study resonate with broader research in educational technology, reinforcing the idea that positive user perceptions are indicative of effective learning tools. The call for further qualitative research aligns with best practices, as highlighted by various studies, and underscores the need for a holistic understanding of the user experience. By incorporating qualitative insights, the iterative development and refinement of the e-module can ensure it becomes more finely tuned to meet the diverse needs of the student population.

Conclusion

Based on the results of the research and discussion, it can be concluded that the average overall student perception results are 89% in the very good category. This indicates that the electronic module (e-module) is good and suitable for use as a distance learning medium in courses on caring for neonates, infants and toddlers.

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Conflict of interest

There is no conflict of interest.

Ethical approval

This research has undergone ethical feasibility testing by the Health Research Ethics Committee of Bakti Tunas Husada University Tasikmalaya with ethical number 189/ec.01/kepk-bth/VII/2022.

Authors' contribution

Each author contributed equally in all the parts of the research. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

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