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Needs Analysis for Developing a Digital Evaluation System for Micro-skills Achievement in the *Merdeka Belajar-Kampus Merdeka* (MBKM) Program

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Abstract

This study analyzed the requirements for a digital system to evaluate microskill achievement within the MBKM program at universities. A descriptive research method was employed, utilizing a Likert-scale-based questionnaire completed by 132 respondents, consisting of 66 students and 66 lecturers from six universities. The sample size was determined through Power Analysis with an effect size parameter (f) of 0,4. The findings reveal that the conventional evaluation system faces challenges, including unclear assessment standards, difficulties in converting microskills to credit point, and time-consuming processes. Both students and lecturers express the need for a digital system that is more transparent, efficient, and capable of enabling real-time monitoring and feedback. These findings form the basis for designing a more effective microskill evaluation system.

Keywords: e-Book Design, Procedure Text, ADDIE Model

INTRODUCTION

The rapid advancement of technology has made education an essential component of societal development. Therefore, education must be of high quality and adaptable to various changes, enabling students to acquire the skills and competencies necessary to compete in the global arena (Baharuddin, 2021; Glassman, 2012). In this context, the role of educators is not merely to transfer knowledge but also to foster critical thinking, creativity, collaboration, and problem-solving skills in students. In addition, curriculum design should integrate technology, character education, and lifelong learning values to ensure that students are truly prepared to face the demands of the 21st century (Jordan et al., 2025; Tang et al., 2020).

In Indonesia, to provide quality education, the government plays a strategic role in designing and developing curricula that not only serve the needs of students and educational institutions but also benefit all stakeholders, including the future social structure (Syapika Adila et al., 2023). The Indonesian government has developed a curriculum based on the Merdeka Belajar (Freedom to Learn) initiative, which(Aan Hendrayana & Pujiastuti, 2018; Ruhiat & Fatah, 2017; The Effect of Learning Method and Adversity Intelligence on Student Learning Outcomes, n.d.) spans from primary education to higher education, commonly known as the *Merdeka Belajar-Kampus Merdeka* program or MBKM (Intan et al., n.d.; Irawan & Suharyati, 2023; Sulistyo et al., 2022). University students today are expected to become agile learners: skilled, adaptable, and resilient (Karia et al., 2019; Mokhtar & Khayyat, 2022; Srinadi et al., 2024).

The MBKM program in higher education offers flexible and independent learning

processes to create an active and innovative learning environment, which is not restrictive and tailored to the needs of students. It encompasses three aspects: attitude, knowledge, and skills (Program et al., n.d.; Wati et al., 2022). The primary goal of the MBKM program is to enhance graduates' competencies, both technical and soft skills, in line with the demands of the industry 4.0 revolution and societal needs (Wati et al., 2022).

Various higher education institutions in Indonesia, both public and private, have started implementing the MBKM program, officially launched in 2020, with positive responses from students (Arifin et al., 2024; Sintiawati et al., 2022). Students are enthusiastic about participating in the MBKM program, as seen in the three evaluation aspects of its implementation: the role of universities in facilitating students to participate in the program, the involvement of faculty members, including the number of lecturers serving as mentors or PICs in the MBKM program (Santoso et al., 2022; Sintiawati et al., 2022). However, challenges in implementation have been observed (Wati et al., 2022).

Preliminary studies on several private universities implementing the MBKM program in Banten Province revealed that the process of converting MBKM achievements into academic credit has thus far been carried out only by the academic department of the university. Meanwhile, program heads and course instructors have not been involved in assessing the MBKM students.

This phenomenon is in line with previous research by Bhakti et al. (2022) and Syapika Adila et al. (2023), which identified several challenges faced by study programs in the MBKM initiative, including difficulties in aligning the existing curriculum with MBKM activities, a lack of partner institutions for independent study and internships, and limited time for lecturers to participate in the program due to their tight schedules (Setiani et al., 2024).

Previous studies have explored the MBKM program. Irawan & Suharyati (2023) found that most students believe the MBKM activities broaden their horizons and add to their competencies, with students feeling that the knowledge gained is relevant to future needs. They emphasized the benefits of the MBKM curriculum in developing students' soft and hard skills, as well as offering learning experiences outside the campus, thereby increasing graduates' competencies. Kurniasih et al. (2022) highlighted students' interest in participating in MBKM to better prepare themselves for the workforce after graduation. They showed that students become more flexible in their academic journey, gain experiences with communities, and are better prepared for employment after completing the MBKM program.

The MBKM program implemented by universities needs to be evaluated in terms of how well the competencies and experiences of students align with the academic disciplines of their study programs, as explored in studies by Mayasari et al. (2022), Mulyana et al. (2022),

Risza et al. (2022), and Suharyati et al. (2021).

Students navigating the traditional system encounter persistent hurdles, including confusion over how microskills translate into academic credit, vague grading criteria, and restricted access to grade information. Instructors, on the other hand, struggle to organize and consolidate assessments quickly and effectively. Taken together, these friction points underscore the necessity for a platform that streamlines both the online submission and evaluation of reports while ensuring evaluators' criteria are visible and feedback is delivered in real time.

The needs analysis has therefore mapped several core capabilities that the system must deliver: the digitization of report uploads; the automated aggregation of microskill scores; uniform criteria for all evaluations; and stronger, purpose-driven communication paths between teachers and students. A holistic insight into these requirements enables the shaping of a platform that will elevate the rigor of academic assessments and shorten the time needed to formally issue academic credit for earned microskills, all within a framework anchored in clarity and operational efficiency.

METHOD

This research is descriptive in nature, aimed at describing the conditions experienced by students and lecturers in the conventional evaluation process of the MBKM microskill achievements, as well as exploring their expectations for the digital system to be developed. Data were collected through a Likert scale questionnaire to measure respondents' levels of agreement with various statements presented (Nugraha, 2024; Rukajat, 2018; Suhirman & Yusuf, 2019).

The sample size determination was conducted using Power Analysis, considering the following components (Brysbaert & Stevens, 2018; Wang & Rhemtulla, 2021):

1. Effect Size (f) = 0.4, categorized as a large effect.
2. Significance Level (α) = 0.05, as the threshold for type I error tolerance.
3. Statistical Power ($1-\beta$) = 0.8, to ensure the probability of detecting a true effect.
4. Number of Groups = 6 Private Universities, which served as the basis for sample selection.

Based on the calculations with these parameters, the minimum sample size per group was determined to be 11 respondents. Therefore, the total number of respondents in this study consists of 66 students and 66 lecturers, each from six private universities, with 11 students and 11 lecturers per institution.

Respondents were selected through purposive sampling with the following criteria:

1. Students who have participated in the MBKM program and have directly experienced the conventional evaluation process for microskill achievement.

2. Lecturers who have experience in evaluating final reports of students in the MBKM program.

The research instrument is a questionnaire divided into two sections for each group of respondents, i.e., students and lecturers. Each questionnaire consists of two aspects. The first aspect measures respondents' experiences in applying the conventional evaluation system for microskill achievements, including the challenges and obstacles they faced. The second aspect explores respondents' expectations for the proposed digital system, based on the difficulties and needs they encountered with the conventional system. Each section consists of 10 statements addressing the problems and unmet needs. Respondents then provide responses to these statements to indicate their agreement or disagreement.

Each statement in the questionnaire is responded to using a Likert scale with five levels in Table 1.

Table 1. Likert Scale

Interval Respond	Value
Strongly Disagree	1
Disagree	2
Neutral	3
Agree	4
Strongly Agree	5

(Priadana & Sunarsi, 2021)

Data collection was conducted online through the distribution of electronic questionnaires to respondents. Respondents were asked to provide feedback on each statement based on their experiences and expectations. The collected data were then summarized for further analysis.

The data obtained from the questionnaires were then calculated to obtain the response score. The response score is the result of the number of responses in each interval multiplied by the value in that interval. It is formulated as follows:

$$epne\ cre = uber\ f\ epne\ n\ each\ nerval \times alue\ n\ he\ nerval$$

The response score obtained was then compared to the maximum score. The maximum value is the result of the number of responses multiplied by the maximum value, which is 5. It is formulated as follows:

$$au\ cre = uber\ f\ epne \times 5$$

The percentage of agreement is the ratio of the response score to the maximum score, formulated as follows:

$$ercenae\ f\ reeen = \frac{epne\ cre}{} \times 100\%$$

The results obtained were then analyzed, both in terms of experiences with the conventional system and expectations for the proposed digital system. This analysis serves as the foundation for designing the system to be developed in alignment with user needs.

RESULTS AND DISCUSSION

The responses obtained from the respondents form the basis for understanding the needs and challenges faced in the microskill achievement evaluation system. The analysis was conducted to identify the main issues encountered by students and lecturers in the conventional system, as well as their expectations for the development of a more effective digital system. This study reveals the challenges and expectations of students and lecturers in evaluating microskills within the MBKM program. These findings are further discussed as follows.

A. Students

For the experience aspect, the majority of students face difficulties in evaluating microskill achievements through the conventional method. As many as 99.09% of students strongly agree that they have difficulty knowing their microskill achievements in the MBKM program, compounded by the lack of clarity in the final report evaluation standards (97.88%). Additionally, 99.39% of students strongly agree that the conversion of microskills to credit point is not transparent, while 89.09% have difficulty accessing the results of their final report evaluation. Some students are also concerned about the risk of report mix-ups, though only 64.55% share this concern. These results can be classified and displayed in Figure 1.

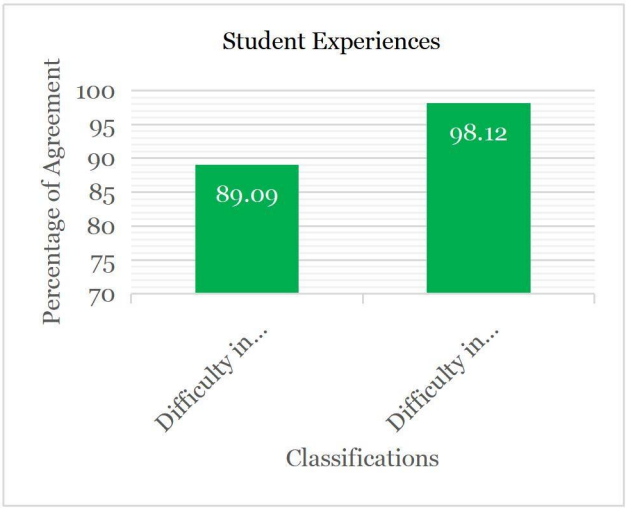

Figure 1. Student Experience

For the expectation aspect, most students expect the digital system to improve transparency and efficiency in the evaluation process. A total of 97.27% strongly agree that real-time access to evaluation status is essential, while 91.21% hope that the system will provide clear information about the evaluation methods. Furthermore, 96.97% of students

strongly agree that the system should display a list of evaluated microskills, and 96.67% want access to evaluation history and feedback from lecturers. The speed of credit point conversion is also a major concern for 95.15% of students. However, the automatic notification feature received more varied responses, with only 62.73% of students agreeing that this feature is necessary. These results can be classified and displayed in Figure 2.

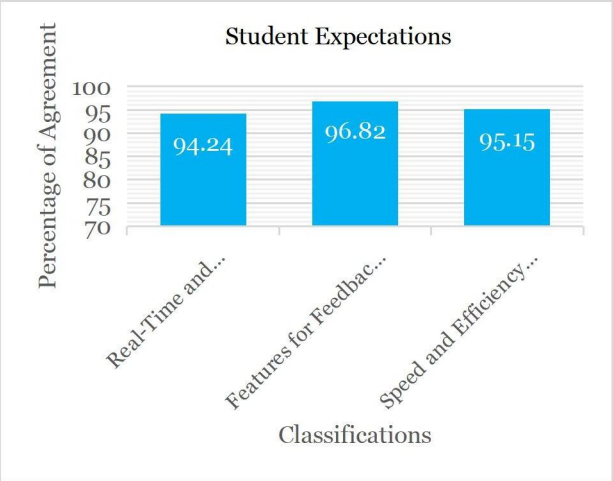

Figure 2. Student Expectations

B. Lecturers

For the experience aspect, lecturers also face challenges in manually assessing microskill achievements. As many as 97.88% strongly agree that compiling evaluation results for credit point conversion is difficult, while 92.73% find the conventional system ineffective for accurate evaluation. The lack of standardized formats for assessment is another challenge, as reported by 94.24% of lecturers. However, 70.91% are neutral about difficulties in determining evaluation standards, indicating that some lecturers still find ways to assess fairly. In terms of efficiency, 88.79% of lecturers strongly agree that manual assessment is time-consuming, and 92.42% experience difficulty tracking evaluation progress. Nevertheless, only 55.15% of lecturers feel that manually collecting reports poses a risk of document loss, suggesting that document management is still relatively reliable. These results can be classified and displayed in Figure 3.

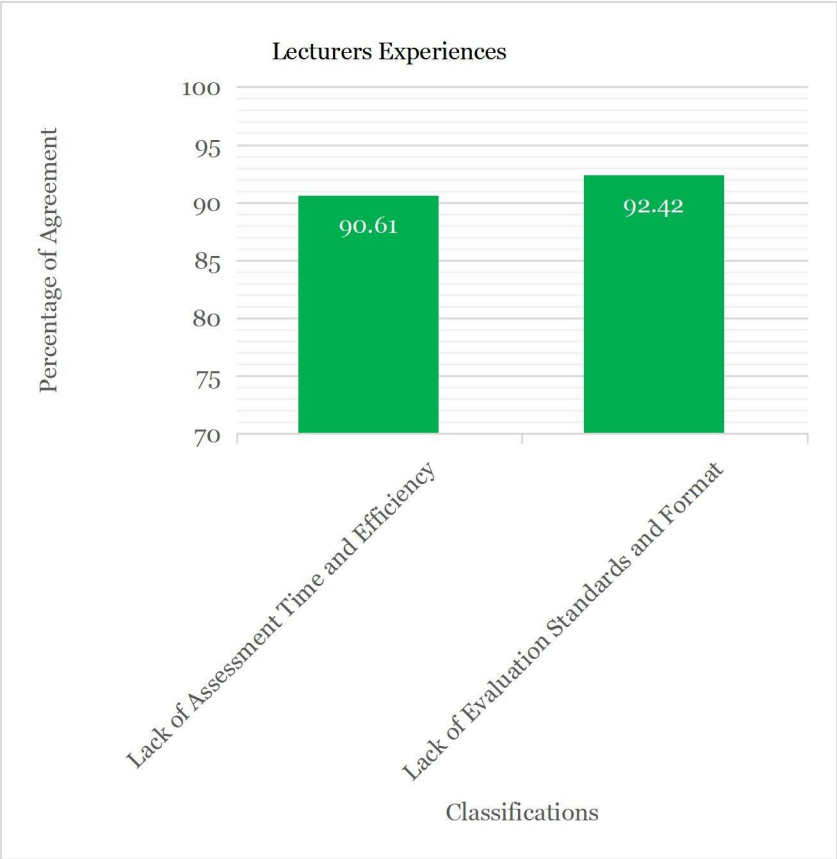

Figure 3. Lecturers Experience

For the expectation aspect, the majority of lecturers support the development of a digital system to facilitate evaluation. A total of 100% of lecturers strongly agree that the system should provide standardized assessment features, while 96.36% expect an automatic evaluation compilation feature. Furthermore, 96.36% strongly agree that the system should include communication and feedback capabilities for students without requiring face-to-face meetings. A real-time evaluation status monitoring function is desired by 90% of lecturers, while 87.88% hope the system can speed up the credit point conversion process. However, some features received more varied responses, such as automatic notifications for unassessed reports (66.06%) and academic approval for credit point conversion (62.73%). These results can be classified and displayed in Figure 4.

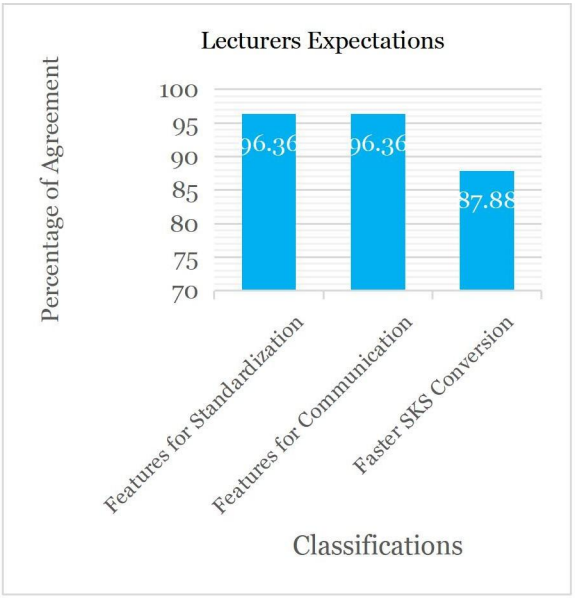

Figure 4. Lecturers Expectations

This investigation demonstrates the necessity for a transparent, streamlined, and uniformly applied framework for assessing student performance in the MBKM initiative. Both learners and faculty report persistent obstacles with the conventional evaluative approach, highlighting a lingering ambiguity that hampers usability. Such findings confirm earlier studies revealing that loosely articulated assessment standards can lower learner motivation and commitment to instructional programs (Padilah et al., 2025; Safitri et al., 2023) . Of special concern is the opacity surrounding the conversion of credit point, a factor that as yet creates uncertainty and risks dampening student enthusiasm for immersive MBKM experiences.

When instructors must labor over paper-based evaluation of students, it highlights a persistent strain in higher education: daily administrative chores are too frequent sap the time and energythat could be devoted to the careful, personalised teaching the students deserve (Hakim et al., 2024; Hardika et al., 2024; Susanto et al., 2025). A persistent lack of standard templates for core assessments introduces a further danger: marks and feedback may drift in quality and style, so students in the same cohort receive differing recognition for equivalent work. Muslikhin, (2024) makes the case powerfully and urgently that disciplined, uniform assessment standards are the only way to treat every learner equally and to maintain the institution's credibility in a competency-based education environment.

A key observation is the uniformity of expectation among students and lecturers. Both cohorts insist on a digital evaluation system incorporating real-time monitoring, uniform rubric templates, and a streamlined credit point conversion mechanism. Their converging requests suggest that a centralized online appraisal system could function as a win-win answer, satisfying the dual imperatives of efficiency and clarity. Additionally, the mutual call for

integrated channels for messaging and rapid feedback aligns neatly with the concept of ongoing formative assessment, which counts immediate, analytic critique as vital to learning progress (Kisno et al., 2023; Nasution et al., 2025; Wulandari, 2024).

In fact, the automatic notification option drew a surprisingly diverse range of reactions. A segment of both students and lecturers welcomes the system as a welcome, gentle nudge, yet an equally sizable group feels that the alerts are either redundant or that they break their concentration. The finding points toward a clear design implication: a digital assessment tool must enable a degree of personalization, so that each user can tailor alerts and prompts in a way that fits their workflow and learning style.

Across the wider educational landscape, embedding digital assessment platforms meshes neatly with the global shift towards digitisation in universities. Harnessing digital tools has become critical for expanding access, fostering transparency, and boosting operational efficiency in tertiary education settings (Agista & Hendrawati, 2025; Jaya et al., 2025; Rafid & Nurita, 2025; Zulfa et al., 2025). For this reason, coupling such platforms with the MBKM framework goes beyond simply addressing regional issues; it reinforces internationally accepted principles governing outcome-oriented learning.

That said, realising a successful roll-out hinges on three interconnected conditions: robust digital infrastructure, proficiency in technology for both academics and learners, and the preparedness of the university as a whole. Absent a comprehensive professional development programme, the innovation threatens to produce more headaches than advantages. Accordingly, subsequent investigations ought to concentrate on small-scale trials, measuring system usability, data integrity, the motivational benefits for learners, and the adaptive burden on faculty members.

Overall, the findings of this study indicate that both students and lecturers share similar needs for a more transparent, efficient, and structured microskill achievement evaluation system. Consequently, creating an integrated digital solution emerges as a pressing necessity; it will give students a clear visual record of their competencies while empowering lecturers to carry out grading that is both swifter and more precise.

CONCLUSION

Based on the study’s findings, learning media is important in the digital era for improving education. The research shows that e-books are effective because they are attractive and easy to access anytime. The study explains that students can learn flexibly at school, home, or community according to the independent curriculum. The researchers state that using local wisdom in e-book content helps students value their culture. However, the study finds that unstable internet connections cause problems for users. The researchers

suggest uploading e-books on platforms like Google Classroom to solve this problem. The study recommends using the ADDIE model to design e-books systematically. It shows that this model helps create media that fits educational goals. The research proves that combining culture and technology in e-books improves learning results. Therefore, the study concludes that developing and using e-books is necessary for modern education.

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