LEARNERS' NEEDS FOR DIGITAL SELF-ASSESSMENT IN PANCASILA STUDENT PROFILE PROJECTS (P5) IN ELEMENTARY SCHOOL

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Abstract

The development of digital technology encourages innovation in learning assessment, including self-assessment which is important for shaping students' learning independence from an early age. However, in elementary schools, the application of digital-based self-assessment is still not optimal, especially in the context of the Pancasila Learner Profile Strengthening Project (P5) which emphasizes the value of reflection and active participation. This study aims to describe learners' needs for digital-based self-assessment, identify challenges faced, and design the concept of its development in the context of P5 in elementary schools. The research used a descriptive qualitative approach and was conducted at SDN Cimuncang with participants as many as 6 teachers and 10 learners involved in the implementation of P5. A purposive sampling technique was used to select the participants. Data were obtained through semi-structured interviews, observation of digital assessment practices in the classroom, and document analysis in the form of reflective journals and school assessment policies. Data analysis refers to the Miles and Huberman model, with the stages of data reduction, data presentation, and conclusion drawing. Triangulation of methods and member-checking were conducted to increase validity. The results showed that the self-assessment implemented did not fully support in-depth reflection, was less interesting, and did not optimally utilize technology. Learners expect more interactive and appreciative assessments. Teachers understand the importance of selfassessment, but its implementation is still limited. The development of digital self-assessment that is adaptive and aligned with P5 principles is needed to improve reflection, motivation, and learning independence.

Keywords: Digital self-assessment; P5; learning reflection; elementary school.

Abstrak

Perkembangan teknologi digital mendorong inovasi dalam asesmen pembelajaran, termasuk selfassessment yang penting untuk membentuk kemandirian belajar peserta didik sejak dini. Namun, di Sekolah Dasar, penerapan self-assessment berbasis digital masih belum optimal, khususnya dalam konteks Projek Penguatan Profil Pelajar Pancasila (P5) yang menekankan nilai refleksi dan partisipasi aktif. Penelitian ini bertujuan untuk mendeskripsikan kebutuhan peserta didik terhadap self-assessment digital, mengidentifikasi tantangan yang dihadapi, serta merancang pengembangannya dalam konteks P5 di Sekolah Dasar. Penelitian menggunakan pendekatan kualitatif deskriptif dan dilaksanakan di SDN Cimuncang dengan partisipan sebanyak 6 guru dan 10 peserta didik yang terlibat dalam implementasi P5. Teknik purposive sampling digunakan untuk memilih partisipan. Data diperoleh melalui wawancara semi-terstruktur, observasi praktik asesmen digital di kelas, dan analisis dokumen berupa jurnal reflektif serta kebijakan asesmen sekolah. Analisis data mengacu pada model Miles dan Huberman, dengan tahapan reduksi data, penyajian data, dan penarikan kesimpulan. Triangulasi metode dan member-checking dilakukan untuk meningkatkan validitas. Hasil penelitian menunjukkan bahwa self-assessment yang diterapkan belum sepenuhnya mendukung refleksi mendalam, kurang menarik, dan belum memanfaatkan teknologi secara optimal. Peserta didik mengharapkan asesmen yang lebih interaktif dan apresiatif. Guru memahami pentingnya self-assessment, tetapi implementasinya masih terbatas. Pengembangan self-assessment digital yang adaptif dan selaras dengan prinsip P5 diperlukan untuk meningkatkan refleksi, motivasi, dan kemandirian belajar.

Kata Kunci: Self-assessment digital; P5; refleksi belajar; sekolah dasar.

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Introduction

21st century learning requires learners to have the ability to think critically, reflectively, and the capacity to evaluate and organize their learning independently to increase understanding and learning independence. In the context of Merdeka Curriculum, one of the innovative approaches implemented is the Pancasila Learner Profile Strengthening Project (P5). This program is designed to form learners who have strong character, 21st century competencies, and the ability to reflect deeply on the learning process by utilizing digital technology as the main tool in self-assessment (Kemendikbud, 2022). Digital self-assessment also encourages learners to more actively control their learning process and improve their learning strategies (Kusuma, A. S., & Nurmawanti, I. 2023). In addition, the use of technology in self-assessment can increase students' intrinsic motivation and confidence in facing academic challenges (Sinthia, R., Elita, Y., & Afriwilda, M. T. 2022). Application of Blended Learning to Increase Motivation and Self-Regulation of Learning in Freshmen. Indonesian Journal of Guidance and Counseling: Theory and Application, 11(2), 81-90. According to Lestariani, N. (2023), well-structured self-assessment helps students understand their expected achievement standards and significantly improves their learning outcomes. With the rapid advancement of educational technology, digital-based self-assessment is becoming an increasingly relevant approach to support learners in identifying, evaluating, and optimizing their learning development effectively and efficiently.

Self-assessment is a key strategy in self-regulated learning, which allows learners to monitor and adjust their learning strategies based on feedback received. In a digital environment, Self-assessment provides flexibility in access and reflection, and increases accuracy in assessing learners' learning progress. The application of technology in Self-assessment can increase learners' engagement in learning, deepen their understanding of the concepts learned, and encourage a more systematic and evidence-based reflective mindset. These theoretical frameworks serve as the foundation for analyzing how digital self-assessment can be developed to enhance learners' reflection, motivation, and autonomy within the P5 framework.

There has been a lot of research on digital-based self-assessment, especially in the context of learning at the higher education level. However, research that integrates digital self-assessment specifically in the context of Merdeka Curriculum for elementary school, especially in supporting the Pancasila Learner Profile Strengthening Project (P5), is still very limited. In addition, it is still rare to find the development of digital self-assessment instruments or media designed to encourage deep reflection, intrinsic motivation, and active involvement of learners in the 21st century learning era. Previous studies have focused more on cognitive aspects, while aspects of character, emotions, and learner independence in the context of basic education have not been comprehensively explored.

This study brings novelty by focusing on digital self-assessment tailored specifically for P5 in elementary schools, with a character-building and reflective learning emphasis, which has not been widely explored in previous literature. It affirms the urgency of designing contextually appropriate tools for younger learners to internalize Pancasila values through technology-supported reflective practices. This research brings novelty by developing a digital-based self-assessment model integrated in Merdeka Curriculum learning, specifically to support the Pancasila Learner Profile Strengthening Project (P5) at the elementary school level. In contrast to previous research which generally focuses on cognitive development at the higher education level, this research emphasizes strengthening self-regulation, learning reflection, and student character building. The self-assessment model developed is designed to be interactive and

adaptive to 21st century learning characteristics, so it is expected to increase motivation, self-confidence, and learning independence of learners from an early age.

In the implementation of P5 in primary schools, studies that specifically explore the development of digital-based self-assessment are limited. The main challenge faced is how to design assessments that are not only relevant to learners' needs, but also in line with P5 principles that emphasize reflection and experiential learning. Therefore, a comprehensive needs analysis is needed to ensure that the development of digital-based self-assessment in P5 can provide optimal benefits for learners. By deeply understanding their needs, the approach to developing digital assessments can be more targeted, adaptive, and in line with the characteristics and learning styles of elementary school students. Based on this background, this study formulates several main questions: (1) What are the needs of primary school learners for digital-based Self-assessment in the implementation of P5? (2) What are the challenges faced in using technology for Self-assessment in primary schools? (3) How to design digital-based Self-assessment that suits the characteristics of learners in P5? By answering these questions, the research is expected to provide a more comprehensive insight into the effectiveness and relevance of digital-based Self-assessment in project-based learning such as P5.

This research aims to describe the needs of elementary school students for digital-based self assessment in implementing P5, identify the challenges faced in its implementation, and design the concept of developing digital-based self-assessment relevant to P5 in elementary schools. Theoretically, this research contributes to the development of self-assessment studies in the context of Merdeka Curriculum and P5 and provides an in-depth understanding of how technology can support independent learning reflection at the basic education level. Practically, the results of this study can serve as a reference for educators, educational technology developers, and stakeholders in designing digital-based self-assessment instruments that suit the needs of elementary school students. In addition, this research is expected to provide concrete recommendations for schools in implementing digital-based self-assessment strategies to improve learning effectiveness in P5.

Research Methods

This research uses a descriptive qualitative approach to analyze learners' needs in digital self-assessment in the Pancasila Learner Profile Strengthening Project (P5) in elementary schools. This method aims to understand learners' experiences in reflection and evaluation of technology-based learning (Creswell, 2014). The research was conducted at SDN Cimuncang, a school actively involved in the implementation of digital P5, making it an ideal setting for examining the integration of digital tools in reflection and self-assessment practices. Participants consisted of 6 teachers and 10 learners, with ages ranging from 10 to 12 years, who were selected using purposive sampling. These learners were chosen based on their active participation in P5 and their prior experience using technology in their learning process.

Data were collected through interviews, observation, and document analysis. Semi-structured interviews explored the experiences and challenges of implementing digital self-assessment, including questions such as: "What challenges do you face when using digital tools for self-assessment?", "How do you feel about the role of digital assessment in your learning?", and "What features would you like to see in a digital self-assessment tool?" Observations were made to see the practice of digital assessment in the classroom, noting how technology was integrated into the self-assessment process. Document analysis included learners' reflective journals and school assessment policies to identify how assessments align with P5 objectives.

Data analysis followed the Miles and Huberman (1994) model with the stages of data reduction, data presentation, and conclusion drawing to identify patterns and relationships in the findings. The results of this study are expected to contribute to the optimization of digital assessment in P5 in primary schools, specifically by offering insights into the needs, challenges, and potential improvements in the design of digital self-assessment tools.

Results and Discussion

At the analysis stage, document analysis and interviews were conducted to identify deficiencies in the implementation of the current self-assessment. These deficiencies are analyzed to determine the need for the implementation of self-assessment to be carried out more optimally. Activities at this stage were carried out by analyzing documents, namely project modules, as well as interviews with 6 teachers and 10 phase C students. The interviews focused on perceptions, experiences, constraints, and expectations of the implementation of self-assessment in P5 activities. The results of this stage became the basis for designing the concept of developing digital-based self-assessment that is more innovative, adaptive, and in accordance with the characteristics of elementary school students. Data analysis was conducted qualitatively by identifying the main themes related to the needs, obstacles, and opportunities in the implementation of digital-based self-assessment.

Document analysis is used to evaluate the self-assessment instruments that have been implemented, such as reflection sheets and other assessments, to determine the extent to which they are effective and in line with learning objectives. Meanwhile, through interviews, insights were obtained directly from learners and teachers about their experiences in conducting self assessment, including the challenges they faced and their expectations of the process. By combining the results of the interviews and document analysis, aspects that need to be improved can be identified, such as the mismatch of the instrument with students' needs, the shortcomings in providing constructive feedback, and the lack of interactivity and student involvement in reflection activities. The results of this analysis will provide a strong basis for developing and improving self-assessment to be more effective and relevant to the needs in the field, as well as supporting a more holistic and comprehensive improvement in learning quality.

Based on some of the strengths and weaknesses found in the document analysis of the project module, it can be concluded that although the Self-assessment presented in this learning reflection has some positive aspects, there are some areas that still need to be improved to increase its effectiveness and appeal to learners. The main strength of the analyzed Self-assessment is its alignment with the learning objectives which encourages learners' active engagement. It also uses clear and developmentally appropriate language, which makes it easier for them to understand and follow the learning process. The presence of interesting fonts and illustrations in some versions of the materials also helps to enrich the learning experience, although it could still be developed further. Learning that supports character building in accordance with the values of Pancasila is also another positive point, as it forms a solid character foundation in learners.

According to Black and Wiliam (1998), effective self-assessment should enable learners to actively reflect on their understanding and adjust their learning strategies. This is in line with formative assessment-based learning principles that emphasize the importance of feedback in improving learning outcomes. However, despite these advantages, there are significant shortcomings that need to be addressed. One of these is the lack of assessment of the Pancasila learner profile, which should be an important part of every learning material in Indonesia. The Pancasila learner profile not only focuses on cognitive aspects, but also measures the

development of a more holistic learner character. According to Zubaidah (2016), character-based assessment in learning is very important to ensure that education is not only oriented to academic aspects, but also to the formation of students' attitudes and social skills.

In addition, this material also does not cover the three aspects of assessment expected in learning, namely cognitive, affective and psychomotor assessment (Bloom, 1956). This indicates that the instruments used need to be expanded to cover various dimensions of learner development. The form of the instrument is also another issue that needs attention. The absence of relevant images or illustrations in some of the materials makes them less appealing to learners, especially to the generation that is more accustomed to visual learning. According to Mayer (2009), the use of multimedia in learning can improve understanding by enriching the visual context and increasing learners' cognitive engagement. Learners' interest in learning materials is highly dependent on the extent to which the media used is able to present a fun and meaningful learning experience.

The answer choices and instrument media used also seem less interesting because they have not utilized digital media that is more in line with the times. The use of technology and interactive digital media will greatly help increase learning motivation and learner engagement. On the other hand, the presence of open-ended questions in the assessment can reduce the measurability of learning outcomes, which would be better if developed with structured questions with clearer and more measurable answer choices.

Based on the points of findings from the teachers who have been interviewed, it can be concluded that although teachers claim to have understood and implemented Self-assessment activities in P5 activities, there are some misconceptions related to Self-assessment instruments. Teachers still think that Self-assessment is a reflection of learning, even though the instrument used is not appropriate. In addition, there are some challenges and expectations related to its implementation that need to be improved to improve the quality of learning and student character development. The advantage is that teachers already know the importance of self-assessment, which is a positive step in encouraging students to self-reflect and assess their own learning process.

However, despite the implementation of self-assessment, there are still some weaknesses that need to be considered. One of them is that the self-assessment activity is still limited to learning reflection activities that only rely on reflection sheets from internet sources, without any further development or more interesting variations. According to Black and Wiliam (1998), assessment instruments that lack variety and are not developed in depth can reduce the effectiveness of formative learning, so that the results obtained are less than optimal. This causes the implementation of self-assessment to be less than optimal because teachers assume that students only answer questions without really doing in-depth reflection or using the results for future improvement.

In addition, teachers have not fully utilized the results of this Self-assessment as evaluation or follow-up material to improve the quality of learning. The absence of utilizing self-assessment results as a basis for learning improvement causes the potential for learner reflection to be less than optimal (Tae, L. F., Ramdani, Z., & Shidiq, G. A. (2019). In fact, the follow-up process based on self-assessment results can help teachers adjust learning strategies according to student needs, improve material delivery methods, and encourage active involvement of learners in designing self-improvement steps. Effective implementation of self-assessment does not only require filling out reflection instruments, but also needs to be followed by analyzing the results, providing constructive feedback, and developing a continuous improvement plan.

Teachers also hope that the Self-assessment instrument can be developed more interestingly and in accordance with the needs of the times, such as using digital media or game-based, which can increase student engagement and motivation. According to Redecker and Punie (2017), utilizing digital technology in assessment can increase student participation and make the learning experience more interactive and interesting. In addition to increasing motivation, appropriately designed digital media can also enrich the assessment content with visual, audio and interactive elements, making it easier for learners to understand the material while feeling more involved in the self-reflection process. The integration of technology in self-assessment also opens up opportunities for learners to get direct and real-time feedback, so they can immediately make improvements to their learning achievements (Al Ardha, M. A. 2022). Therefore, the development of assessment instruments based on modern technology is not only relevant to the characteristics of 21st century learners, but also important to support the creation of more adaptive, participatory, and meaningful learning.

Overall, although Self-assessment activities have been implemented, there needs to be more effort in developing more attractive instruments, utilizing the results for a more thorough evaluation, and integrating digital technology to adapt to the times. With these improvements, self assessment activities can be more effective in improving the quality of learning and character development of students. The following table 2 analyzes the results of interviews with teachers:

Table 2. Analyzes The Results Of Interviews With Teachers

	Table 2. Analyzes The Results Of Interviews with Teachers			
No	Question	Teacher's Answer	Main Findings	
1	What do you understand about self-assessment in the context of learning?	Self-assessment is understood as the students' process of reflecting on their learning achievements and processes.	The teacher has a good understanding of the self-assessment concept.	
2	How do you explain self-assessment to students?	The teacher uses simple language and gives concrete examples (e.g., evaluating one's own work).	The explanation is adjusted to the students' age and comprehension level.	
3	Since when have you been implementing self-assessment in your teaching?	Most teachers started implementing it when the Merdeka Curriculum was introduced.	Implementation began with the introduction of P5 and differentiated learning.	
4	Why did you choose to use self-assessment in your teaching?	To increase students' awareness of their learning process and encourage independence.	Self-assessment is considered to support meaningful learning.	
5	What forms or formats of self-assessment do you use in class?	Simple rubrics, checklists, reflection journals, and sometimes verbal.	Formats vary and are adjusted to students' characteristics.	
6	How do you guide students in conducting self-assessment?	By providing examples, guiding the initial steps, and giving reflection time.	Guidance is crucial during the initial stage of implementation.	
7	Do you provide guidelines or specific criteria before students conduct self-assessment?	Yes, the teacher provides a simple rubric or criteria.	Criteria are explicitly and clearly stated.	
8	How do you monitor and evaluate students' self-assessment results?	Through reflective discussions, portfolios, and teacher notes.	Teachers play a role in checking students' honesty and appropriateness.	
9	What challenges or obstacles do you face in implementing self-assessment in class?	Students are not used to it, lack honesty in evaluation, and time constraints.	Main challenges are students' readiness and time management.	

10	How do you overcome those challenges?	By building habits, educating about honesty values, and using visual aids.	Solutions involve method adaptation and character reinforcement.
11	In your opinion, how does self-assessment help students improve their learning?	Students become more aware of their learning process, more reflective, and independent.	Self-assessment fosters learning awareness.
12	What impact have you observed on students' engagement and motivation after implementing self-assessment?	Students become more active, engaged, and motivated to improve.	Engagement and motivation have increased.
13	What advantages have you experienced after implementing self-assessment?	It improves teacher-student closeness and deepens learning understanding.	
14	Are there any shortcomings or aspects that need improvement in your self- assessment implementation?	Time adjustments and improving students' understanding are needed.	There is a need for system strengthening and student training.
15	What advice would you give to fellow teachers who want to start implementing self-assessment?	Start with simple steps, use children's language, and build habits.	Start small and be consistent.
16	What are your hopes for the development of self-assessment in the future?	Availability of digital platforms and further teacher training.	Digitalization and training are needed.

Source Adaptation: Miles & Huberman (1994).

Based on the findings of interviews with learners, it can be concluded that learners understand self-assessment as a reflection of learning, because the teacher gives such an understanding. This suggests that learners need further guidance to understand the full meaning of self-reflection and how it can be applied to improve their learning strategies. Improving learners' understanding of self-assessment can be done by providing concrete examples, linking reflection to daily learning experiences, and encouraging them to set self-improvement targets. In addition, it is important to develop self-assessment instruments that not only ask learners to describe their experiences, but also invite them to evaluate their strengths and weaknesses, and plan their future development steps. With this approach, self-assessment can function optimally as a metacognitive development tool that encourages learners to become more independent and reflective learners.

Self-assessment can significantly improve learners' understanding of their own learning process. However, despite this potential, many learners feel that the self-assessment tools used are unengaging and resemble traditional tests, which are often monotonous and do not encourage deep reflection (Andrade & Du, 2019). This indicates that the design of self-assessment instruments needs to be updated to be more interactive, contextual, and aligned with the characteristics of today's learners. The use of creative media, such as educational game-based applications or digital reflection platforms, can be an effective alternative to enhance learners' interest and participation in the self-reflection process (López-Pernas et al., 2021).

Moreover, many learners express the need for their efforts in self-assessment to be acknowledged through feedback. According to Hattie and Timperley (2020), effective feedback is a key factor in improving learning outcomes. Learners desire more concrete feedback on their efforts and recognition of their reflective processes. This recognition is crucial for boosting motivation and further engagement in the learning process (Deci & Ryan, 2017). To meet these

needs, teachers should provide feedback that is specific, constructive, and encourages learners to see their potential. Additionally, feedback mechanisms can be enhanced by using digital platforms that offer fast and personalized responses, ensuring learners feel valued and supported throughout their learning journey (Gikandi et al., 2021).

However, learners often face challenges, particularly regarding the time allocated for self-assessment activities. Some students feel that these tasks are time-consuming, especially when reflection sheets are given after class hours or outside school time. This aligns with Butler and Winne's (2020) research, which highlights the importance of sufficient time for deep reflection in self-assessment. Learners also desire self-assessment activities that are more engaging and interactive, as opposed to the formal and rigid reflection sheets that often feel monotonous. Research by Nicol and Macfarlane-Dick (2022) suggests that technology-based self-assessment or more interactive activities can increase learner engagement and motivation.

Although learners understand and accept self-assessment as part of the learning process, there are some areas for improvement. Developing more engaging instruments, providing clearer feedback, and adjusting the timing of the activity would increase learners' engagement in the Self assessment process and help them better understand the benefits of this activity for their learning development. The following table 3 is related to the results of the analysis of interviews with students:

Table 3. Results of Interview Analysis with Learners

No	Question	Student's Answer	Main Findings
1	What do you understand about self-assessment in learning?	Assessing your own learning results, usually after completing an assignment or learning activity.	Students understand the basic concept of self-assessment simply.
2	How do you think self-assessment is different from teacher assessment?	Self-assessment is done by yourself, while teacher assessment is usually more complete and detailed.	Students can differentiate between self and teacher assessment.
3	Have you ever done self- assessment in learning? If yes, when and in which subjects?	Yes, usually in P5, Indonesian Language, and during group projects.	Self-assessment has been introduced in several subjects.
4	How do you conduct self- assessment? Are there instructions or guidelines from the teacher?	Filling out question sheets, rubrics, or writing opinions about your work. There are instructions from the teacher.	Teachers provide guidance before self-assessment.
5	In your opinion, what are the benefits of doing self- assessment in learning?	You can know what you have mastered and what you haven't, and fix mistakes.	Helps students recognize their strengths and weaknesses.
6	Does self-assessment help you know how well you understand the material? Explain!	Yes, because you can check yourself whether you understand or not.	Helps students evaluate their comprehension.
7	Do you feel more involved in learning when using self-assessment? Why?	Yes, because you think and evaluate yourself, and feel responsible.	Increases participation and learning awareness.
8	Does self-assessment help you be more responsible for your own learning?	Yes, because you have to be honest and know what needs improvement.	Fosters a sense of responsibility toward learning.
9	Have you ever found it difficult to do self-assessment? If yes, what made it difficult?	Yes, confused about evaluating myself and afraid of making mistakes.	Difficulty occurs due to uncertainty in self-evaluation.

10	How do you overcome those difficulties?	Ask the teacher or friends, look at assessment examples.	Students seek help when confused.
11	What differences do you feel between teacher assessment and self-assessment?	Teacher assessment is more detailed and usually has stricter grading, self-assessment is lighter and more honest.	Students notice differences in objectivity and honesty aspects.
12	Which one do you find more beneficial, teacher assessment or self- assessment? Why?	Both are important. Teacher gives objective assessment, self-assessment helps recognize your own ability.	Students see the balanced benefits of both.
13	What advantages do you feel from using self-assessment?	Can find own mistakes, learning becomes easier and more honest.	Students feel more independent and reflective.
14	Are there things you think need to be improved or added to the self-assessment process?	Add more examples or clearer explanations to avoid confusion.	Students need more visual and practical guidance.
15	What advice would you give teachers to make self-assessment more helpful for you?	Give examples, easy-to- understand explanations, and help during assessment.	Teachers need to guide with simple and supportive language.
16	What are your hopes for the use of self-assessment in future learning?	Want it to be used more often, and using tablets/phones would be more fun.	Students hope for digitalization and higher frequency.

Conclusion

Elementary school students' needs for digital-based self-assessment lead to instruments that are interactive, interesting, easy to use, and able to encourage deep learning reflection in supporting the Pancasila Learner Profile Strengthening Project (P5). In its implementation, some of the challenges that arise include teachers' limited understanding of the concept of technology-based self-assessment, the lack of variety of assessment instruments, and the low involvement of students in the reflection process. The self-assessment currently used is still simple, not optimal in utilizing digital technology, and has not fully supported the formation of the Pancasila learner character. To overcome these problems, it is necessary to develop digitalbased self-assessment that is adaptive, interesting, and able to provide concrete feedback in order to increase learning effectiveness and learner independence. As a follow-up, the development of innovative and contextual digital assessment media or platforms needs to be carried out, accompanied by product trials to strengthen learning reflection and character building in elementary schools. In addition, active involvement of learners in the process of developing selfassessment instruments is also important to ensure that the assessments developed really suit their needs and characteristics. Teacher empowerment through continuous training on the use of technology in assessment is also a strategic step to support the creation of a more reflective, adaptive and character-strengthening oriented learning ecosystem. The scientific contribution of this research is the development of a digital-based self-assessment model that is integrated with the Merdeka Curriculum, especially to support P5 at the primary education level, and provides new insights into how technology can support deeper reflection on learning and learning independence from an early age.

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