

THE IMPLEMENTATION OF STUDENT-CENTRED LEARNING IN THE MERDEKA CURRICULUM THROUGH THE USE OF EDUCAPLAY

Aura Sabrina Malika¹, Sapriya², Rahmat³, Pitria Sopianingsih⁴

^{1,2,3,4} Civic Education Study Program, Universitas Pendidikan Indonesia
email: aurasabrina25@upi.edu

ABSTRACT

The implementation of the Merdeka Curriculum requires the realization of student-centered learning (SCL), which promotes students' active participation, independence, and collaboration. However, classroom practices in schools are still often dominated by teacher-centered approaches, highlighting the need for innovative learning media that support this educational transformation. This study aims to analyze the implementation of student-centered learning within the Merdeka Curriculum through the utilization of the Educaplay platform in Pancasila Education at the senior high school level. This research employed a descriptive qualitative approach with a case study design. Data were collected through participatory observation, expert validation of learning materials and instructional tools, and documentation. Data analysis was conducted qualitatively using the Miles and Huberman interactive model, while validation data were analyzed using feasibility percentages. The findings revealed that the developed instructional tools achieved an average validation score of 98.75%, categorized as excellent. The implementation of Educaplay features, including interactive slideshow, matching game, and froggy jumps, successfully increased students' active engagement, fostered learning independence, strengthened collaboration and communication skills, created more meaningful and contextual learning experiences, and transformed the teacher's role into that of a learning facilitator. These findings are further supported by a synthesis of the literature indicating that gamification and game-based learning effectively enhance students' motivation, participation, and learning outcomes. Therefore, Educaplay functions not only as a digital learning medium but also as a pedagogical tool that supports the implementation of student-centered learning principles within the Merdeka Curriculum.

Keywords: *Merdeka curriculum, student-centered learning, educaplay, gamification, pancasila education*

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INTRODUCTION

The 21st century has placed the world of education at a crossroads between established pedagogical traditions and the demands of new competencies that are constantly evolving. The Fourth Industrial Revolution and the acceleration of digital transformation, particularly in the wake of the COVID-19 pandemic, have fundamentally transformed the way learner's study, interact and construct knowledge. UNESCO (2023) notes that more than 1.6 billion learners across 190 countries have been affected by the disruption to conventional learning, driving the mass adoption of digital learning platforms. This transformation is no longer viewed as an emergency response but has evolved into a new long-term educational paradigm (Boztaş et al., 2025; Sulkipani et al., 2025). This transformation presents intertwined challenges and opportunities: on the one hand, technology opens up learning spaces that are more personalised, adaptive and engaging; on the other hand, gaps in infrastructure, teacher readiness and digital literacy remain significant barriers, particularly in developing countries (Aldosari, 2025; Salendab & Tago, 2025).

In the context of Indonesian education, these challenges are being addressed through a transformative policy known as the Kurikulum Merdeka. This curriculum represents a paradigm shift from a standardised, teacher-centred approach to a flexible, contextual, and learner-centred model (Amiruddin et al., 2023; Rosidin et al., 2025). As a policy framework, the Merdeka Curriculum grants autonomy to educational institutions and teachers to design learning experiences relevant to the needs, potential, and local context of learners. The principle of "merdeka belajar" (independent learning), which forms the spirit of this curriculum, embodies the aim of liberating learners from the shackles of passive and verbalistic learning, towards active learning that develops creativity, critical thinking skills, and 21st-century competencies (Saa, 2024; Thaariq, 2026).

One of the key characteristics of the Merdeka Curriculum that forms the focus of this article is student-centred learning (SCL). This concept is rooted in the traditions of constructivism and experiential learning, which emphasise the active role of learners as agents in the process of knowledge construction (Salendab & Tago, 2025). In the implementation of the Merdeka Curriculum, SCL is realised through a differentiated learning approach, as well as the development of authentic and formative assessment. However, various studies indicate that the transition from teacher-centred to student-centred learning is not without obstacles: uneven teacher pedagogical competence, a heavy administrative burden, and a lack of concrete implementation models present challenges that need to be addressed (Sa'idah et al., 2025; Kusumawati & Umam, 2025).

This is where educational technology, particularly gamification-based learning platforms such as Educaplay, plays a strategic role. Empirical research consistently shows that game-based learning and gamification can enhance learners' engagement, motivation and learning outcomes through mechanisms such as immediate feedback, progressive challenges and enjoyable social interaction

(Ukgoda, 2025; Jun & Lucas, 2025). Educaplay, as a web-based platform offering a variety of interactive activities ranging from matching games and froggy jumps to interactive slideshows with gamification elements such as badges, points, leaderboards and levels, provides a learning ecosystem with the potential to concretely support the realisation of SCL within the context of the Merdeka Curriculum.

Against this background, this article aims to conduct a critical analysis and literature synthesis on how the use of Educaplay can support the implementation of student-centred learning within the Merdeka Curriculum. By integrating theoretical reviews, empirical evidence from Scopus-indexed journals, and implementation studies, this article seeks to bridge the gap between curriculum theory, SCL principles, and the practice of educational technology utilisation in contemporary Indonesian classrooms.

RESEARCH METHOD

This study employs a descriptive qualitative approach using a case study design. The qualitative approach was chosen because the research objective focuses on gaining an in-depth understanding of the phenomenon of implementing student-centred learning in the real-world context of Pancasila Education classes, rather than on statistical generalisations (Creswell & Poth, 2018). The case study design was used to explore in depth how the use of the Educaplay platform contributes to the realisation of the principles of student-centred learning (SCL) within the Merdeka Curriculum, whilst taking into account the contextual complexities surrounding it (Yin, 2018).

The research was conducted at a senior secondary school in Indonesia within the subject of Pancasila Education. The research subjects were students participating in lessons using Educaplay-based tools developed by the researcher. The selection of research subjects was carried out purposively, based on the alignment of the learning context with the research focus (Patton, 2015). The research was carried out over three learning sessions covering the position and status of citizens, the rights and obligations of citizens, the challenges to national awareness in the era of globalisation, and the Four Pillars of Nationalism. The research procedure was carried out in three stages. First, the pre-implementation stage, which involved initial observations to identify learning conditions and needs, as well as the development and validation of learning materials (teaching modules, teaching resources, worksheets, and Educaplay media). Second, the implementation stage, which involved delivering lessons using the interactive slideshow, matching game, and Froggy Jumps features of the Educaplay platform. Third, the post-implementation stage, which involved data analysis and drawing conclusions based on all the data collected.

A total of 31 Grade X students from Class X-E participated in this study, comprising 15 male and 16 female students. The study was conducted at SMA Angkasa Husein Sastranegara Bandung, an A-accredited senior high school located

in an urban area of Bandung, Indonesia. The school was selected because it had implemented the Merdeka Curriculum, provided adequate technological facilities to support digital learning, and granted permission for the implementation of the research intervention. The learning environment was supported by relevant technological infrastructure, including students' smartphones and LCD projectors, which facilitated the implementation of Educaplay in Pancasila Education. Pancasila Education instruction was conducted over three meetings on 16, 23, and 30 April 2026, from 11:20 a.m. to 12:50 p.m. Class X-E was selected using purposive sampling because it was studying the targeted Pancasila Education topic during the research period, the class schedule accommodated the intervention, and all students had access to smartphones required to participate in the Educaplay-based learning activities. This sampling approach is consistent with the principle that purposive sampling should align the research context and phenomenon under study with the research focus (Patton, 2015).

The data collection techniques in this study utilised three main instruments. Firstly, participant observation using a structured observation sheet to record learner engagement, classroom dynamics, and learning practices during the implementation phase. Observations were conducted by two observers to ensure the objectivity and reliability of the data (Merriam & Tisdell, 2016). Second, expert validation of the developed learning materials was carried out by two validators using an assessment instrument covering aspects of alignment with the Merdeka Curriculum, content quality, and media suitability. Third, documentation in the form of field notes and students' work served as supporting evidence for the analysis (Creswell & Poth, 2018).

The two validators consisted of two senior Pancasila and Civic Education teachers at the senior high school level, with seven and eight years of teaching experience, respectively. Validation was conducted using a structured instrument employing a 10–100 rating scale to evaluate the components presented in Table 1. Following the initial validation, the teaching materials were revised based on the validators' qualitative feedback, including refining the wording of the trigger questions and improving the clarity of several learning activity instructions, before the materials were implemented in the classroom.

The validation data for the learning materials were analysed quantitatively using percentage score calculations to determine the suitability categories, with the following criteria: 85% – 100% = very good, 70% – 84% = good, 55% – 69% = adequate, and below 55% = poor (Akbar, 2013). Meanwhile, the observational data on the implementation of learning was analysed qualitatively through three interactive stages of analysis: data reduction, data presentation, and drawing conclusions (Miles et al., 2014). The validity of the data was ensured through source triangulation, namely by comparing data from observation sheets, field notes, and learning documentation to obtain a comprehensive and reliable picture (Lincoln & Guba, 1985).

The coding process began with open coding of the observation sheets and field notes, in which descriptive data were segmented into meaningful units and labelled according to recurring patterns of student and teacher behaviour. These initial codes were then grouped into broader categories through axial coding, guided by the theoretical constructs of student-centred learning (engagement, autonomy, collaboration, meaningfulness, and facilitation). The five indicators reported in the Results section emerged through this iterative process of comparing codes across the three observation sessions and across both observers, and were refined through discussion between the researcher and the observers to reach consensus. The observation data were coded independently by two observers using a structured observation sheet developed for this study. After the independent coding process, the observers compared their coding results and discussed any discrepancies until a consensus was reached. This consensus-based procedure was employed to improve the consistency and trustworthiness of the observation data. The coding scheme was based on the predefined observation indicators presented in the observation instrument, which guided the systematic recording of students' learning activities and classroom interactions throughout the implementation of the Educaplay-based learning sessions.

In addition to empirical data from classroom implementation, this article also conducts a systematic literature review of Scopus-indexed journals to strengthen the theoretical and empirical arguments. The literature selection process followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) protocol with the following inclusion criteria: (1) published between 2020 and 2026; (2) relevant to the topics of student-centred learning, gamification in education, and/or the Merdeka Curriculum; and (3) having undergone a peer-review process in a reputable international journal (Page et al., 2021). This literature synthesis aims to integrate global empirical evidence with findings from local case studies, thereby producing an analysis that is both contextual and universally relevant.

RESULTS AND DISCUSSION

RESULTS

The implementation of student-centred learning within the Merdeka Curriculum began with observation activities to identify learners' characteristics, learning conditions, and learning needs in Pancasila Education. The results of the observations indicated that the learning process was still dominated by a conventional, teacher-centred approach. Teachers served as the primary source of information, whilst learners' involvement in the learning process remained relatively limited. The use of digital media has also not been optimised, meaning that opportunities for learners to learn actively, independently, and collaboratively remain underutilised.

These initial findings form the basis for the development of learning resources that integrate the principles of student-centred learning with the use of the

Educaplay platform. The materials developed cover the position and status of Indonesian citizens, the rights and obligations of citizens, the challenges of national awareness in the era of globalisation, and the Four Pillars of Nationalism. All materials are designed so that learners not only acquire conceptual knowledge but are also able to connect the material with their experiences and daily lives, in line with the characteristics of meaningful learning in the Merdeka Curriculum.

The teaching materials developed consist of teaching modules, teaching resources, worksheets, and Educaplay-based learning media that utilise interactive slideshows, matching games and Froggy Jumps. The materials were developed in accordance with the principles of active, collaborative and learner-centred learning. Before being used in the learning process, the materials were first validated by two validators.

The validation results showed that the teaching modules achieved an average score of 98.75%, falling into the 'very good' category. Almost all components received the maximum score, including module identity, prior competencies, graduate profile, learning objectives, assessment, meaningful understanding, trigger questions, and learning reflection. These findings indicate that the developed materials align with the characteristics of the Merdeka Curriculum and are suitable for use in supporting the implementation of student-centred learning.

Table 1.
Results of the Teaching Module Evaluation

No.	Component	Percentage (%)
1.	Module Identity	100
2.	Initial Competencies	100
3.	Graduate Profile	100
4.	Facilities and Infrastructure	100
5.	Target Learners	100
6.	Learning Model	95
7.	Learning Objectives	100
8.	Assessment	100
9.	Meaningful Understanding	100
10.	Trigger Questions	100
11.	Learning Activities	95
12.	Learner and Teacher Reflection	100
13.	Student Worksheet (LKPD)	90
14.	Reading Materials	100

No.	Component	Percentage (%)
15.	Glossary	100
16.	References	100
Average		98.75

Source: Data compiled by the researcher (2026)

The learning programme was delivered over three sessions. In the initial phase of the programme, learners used the interactive slideshow feature to study the material on national awareness. The material was not only presented in text form, but was also combined with illustrations, key points, visual icons and reflective questions.



Figure 1.

Interactive Slideshow Display

Source: Data compiled by the researcher (2026)

Figure 1 shows that the material is not only presented in text form, but is also accompanied by illustrations, key points and reflective questions that encourage learners to relate the material to their daily lives. The visual presentation of the material helps to simplify abstract concepts of citizenship, making them easier for learners to understand. Based on the results of the observation, the use of an interactive slideshow provided learners with the opportunity to explore the material more independently. Learners did not merely listen to the teacher's explanations, but actively read, observed, and discussed the content of the material presented. Some learners were seen linking the material on the rights and duties of

citizens to experiences they had encountered within the school environment and the wider community.

This is illustrated by the following field-note excerpt: "During the interactive slideshow activity on the topic of citizens' positions, roles, and responsibilities, students appeared highly engaged and actively participated in the discussion. Several students commented that the slideshow made the material easier to understand because the concepts were presented through clear visuals, short explanations, and interactive questions. One student stated, 'The slideshow helps me understand our roles and responsibilities as citizens more easily because the examples are clear and interesting.' The teacher also noted that students were more willing to respond to questions and participate in classroom discussions than during conventional instruction.

After gaining an initial understanding through the slideshow, learners continued their learning activities using the matching game feature. This activity was designed to reinforce their conceptual understanding of the rights, duties and responsibilities of citizens by matching concepts with examples of their application.



Figure 2.
Educaplay Matching Game Display
Source: Data compiled by the researcher (2026)

The matching game was conducted in groups so that pupils had the opportunity to discuss and work together to complete the task. Based on observations during the lesson, almost all groups demonstrated active engagement in the discussion process. Pupils exchanged views, presented arguments, and helped group members who were struggling to understand certain concepts. The inclusion of game elements such as scores, challenges, and time limits encouraged pupils to be more focused and active in completing the learning activities. The classroom atmosphere, which had

previously tended to be passive, became more interactive as pupils were directly involved in the learning process. During the learning evaluation stage, students utilised the 'Froggy Jumps' feature. This activity required students to answer multiple-choice questions to help the game's character achieve a specific objective.

This is reflected in the following excerpt from the classroom observation notes: During the matching game activity, students actively discussed the correct pairs by connecting concepts, real-life examples, challenges, and possible solutions. The observation notes indicated that the activity helped students understand the relationships among these elements more systematically. One student commented, 'The matching game makes it easier to connect the concepts with real examples, identify the challenges, and determine the appropriate solutions.' Students also supported one another by explaining their reasoning before agreeing on the correct matches.



Figure 3.

Froggy Jumps Display

Source: Data compiled by the researcher (2026)

Figure 3 shows that the 'Froggy Jumps' feature integrates elements of scoring, time limits and the number of attempts (lives) into the learning assessment process. Learners are required to think quickly and accurately when selecting the correct answer in order to continue the game. Observations indicate that learners were very enthusiastic about taking part in this activity. Most learners attempted to solve the problems independently before discussing them with their groupmates. When they obtained an incorrect answer, learners endeavoured to correct their mistakes and repeat the activity to achieve a better result.

This is exemplified by the following observation excerpt: During the Froggy Jumps activity, one student initially selected an incorrect answer, then reviewed the feedback provided by the system and chose to repeat the activity. On the second attempt, the student correctly answered the questions and remarked, 'Repeating the game helped me understand why my first answer was incorrect, so I could choose the correct one.' The observation notes also indicated that several other students voluntarily repeated the activity to improve their understanding and achieve better results.

The effectiveness of the lesson delivery was directly observed by the subject teacher using an observation sheet. The observation results showed that almost all aspects of the lesson were rated as 'very good', particularly in terms of motivation, classroom management, active student engagement, the use of Educaplay media, and the linking of the material to real-life contexts.

Table 2.

Summary of Classroom Observation Results During Learning Implementation			
Learning Aspect	Observation Indicators (Examples)	Score / Percentage (%)	Category
Introduction Activities	Opening greeting, apperception linking prior knowledge, conveying learning objectives	100%	Excellent
Learning Management	Time management, classroom control, sequencing of activities	95.45%	Excellent
Use of Educaplay	Variety and appropriateness of features used (slideshow, matching game, Froggy Jumps), technical execution	100%	Excellent
Student Engagement	Active participation, question-asking, on-task discussion behaviour	100%	Excellent
Reflection and Closing Activities	Summarising key points, guided reflection questions, closure of the session	100%	Excellent
Follow-up Learning Activities	Assignment/task given, guidance for the next learning session	75%	Good

Source: Data compiled by the researcher (2026)

The observation checklist employed a four-point rating scale, where 1 = Poor, 2 = Fair, 3 = Good, and 4 = Excellent. Each indicator was scored by the observers, and the total score for each learning aspect was converted into a percentage using the formula: (obtained score / maximum possible score) × 100. Based on this scoring procedure, the Introduction Activities obtained 24/24 (100%), Learning Management 42/44 (95.45%), Use of Educaplay 20/20 (100%), Student Engagement 16/16 (100%), Reflection and Closing Activities 16/16 (100%), and Follow-up Learning Activities 3/4 (75.00%). These percentages were subsequently

classified into performance categories, with scores of 81–100% categorized as Excellent, 61–80% as Good, 41–60% as Fair, and $\leq 40\%$ as Poor.

Overall, the findings of the study indicate that Educaplay's gamification can be successfully implemented in Pancasila education. This medium not only facilitates a more interactive delivery of the subject matter, but also enhances student participation and helps to link the concept of national consciousness with a more contextual learning experience.



Figure 4.

Learning Activities

Source: Data compiled by the researcher (2026)

Based on the entire series of observation activities, the development of teaching materials, and the implementation of learning across three sessions, five key indicators of the successful implementation of student-centred learning through Educaplay were identified: (1) increased student engagement, (2) the development of independent learning, (3) increased collaboration and communication among students, (4) the creation of more meaningful and contextual learning, and (5) the shift in the teacher's role to that of a learning facilitator.

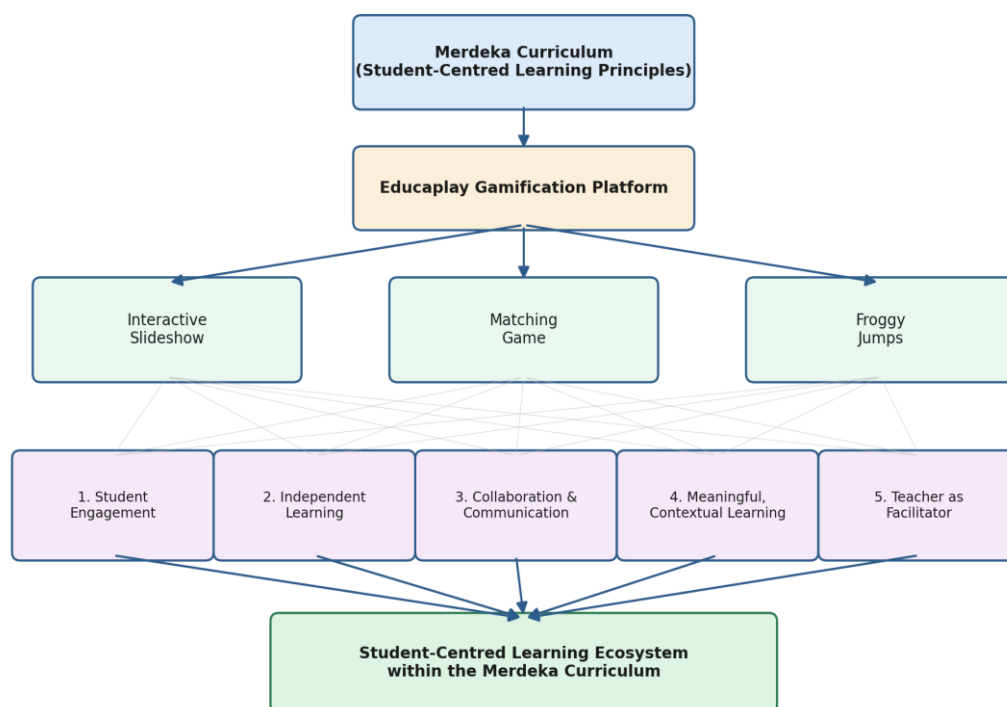


Figure 5.

Conceptual Framework of Educaplay-Supported Student-Centred Learning Implementation

Source: Developed by the researcher (2026)

Figure 5 illustrates how the Merdeka Curriculum's student-centred learning principles are operationalised through Educaplay's three features, converging into the five indicators of successful implementation identified in this study, which together form a cohesive student-centred learning ecosystem.

DISCUSSION

The learning materials developed in this study achieved an average validation score of 98.75%, falling into the 'very good' category. Almost all components, ranging from module identity, prior competencies, graduate profiles, learning objectives, assessment, meaningful understanding, trigger questions, to learning reflections, received the maximum score. These findings indicate that the designed materials are in line with the characteristics of the Merdeka Curriculum, which prioritises flexibility and a learner-centred approach. These validation results are consistent with research showing that the Merdeka Curriculum, as a flexible, competence-based framework, requires learning materials capable of supporting teacher autonomy and differentiated instruction (Amiruddin et al., 2023; Saa, 2024). Flexibility in the development of teaching materials is one of the strengths of the Merdeka Curriculum, enabling teachers to adapt content to the needs and

characteristics of learners (Winarto et al., 2025). The ‘meaningful understanding’ component, which achieved a perfect score in the validation, reflects the Merdeka Curriculum’s orientation towards contextual learning. This aligns with empirical findings confirming that project-based approaches and authentic contexts are essential foundations for meaningful learning within a competency-based curriculum (Nur Hakim et al., 2024).

The implementation of Educaplay’s interactive slideshow feature has been shown to increase pupils’ engagement in the learning process. Pupils do not merely listen to the teacher’s explanations, but actively read, observe and discuss the material presented through a combination of text, illustrations, visual icons and reflective questions. Some students were even seen linking the material on citizens’ rights and responsibilities to real-life experiences within the school and community. These findings are consistent with empirical evidence showing that interactive digital platforms can foster active learning by providing immersive, interactive, and adaptive experiences (Nunes et al., 2025). Meta-analyses also confirm that the appropriate use of digital technology can increase student motivation by up to 23% and knowledge retention by 31% (Guaña-Moya et al., 2024). Within the context of the Merdeka Curriculum, student engagement is a key indicator of the successful implementation of SCL. Empirical studies in Indonesia confirm that SCL principles—including autonomy, critical thinking, and active engagement—can be effectively applied when supported by appropriate digital media (Amiruddin et al., 2023). The Educaplay platform, through its interactive features, facilitates the transition from teacher-centred learning to student-centred learning, in line with the philosophy of the Merdeka Curriculum (Salendab & Tago, 2025). The reflective questions incorporated into the slideshow also help to foster the development of learners’ metacognitive skills. This is consistent with findings showing that flexible, learner-centred curricula support the development of self-regulated learning skills and enhance metacognitive abilities (Ibrahim et al., 2026).

Conducting matching games in groups provides an opportunity for learners to develop their collaboration and communication skills. Observations show that almost all groups were actively engaged in discussions, exchanging views, presenting arguments, and helping members who were struggling. Game elements such as scores, challenges and time limits encouraged focus and active participation, transforming the classroom atmosphere from one that was initially passive into a more interactive one. These findings are supported by research that consistently demonstrates that educational games and gamification elements—particularly scores, badges, and leaderboards effectively enhance students’ motivation, engagement, and academic performance across various levels and subjects (Jun & Lucas, 2025; Yu et al., 2021). A meta-analysis indicates that gamification strategies increase participation, foster intrinsic motivation, and improve knowledge retention (Smirani & Yamani, 2024). Furthermore, collaborative learning in gamified environments has been shown to yield better academic performance, with intrinsic motivation acting as the primary mediator (Zheng & Wang, 2023). These

findings reinforce the argument that matching games in Educaplay serve not only as a means of practice but also as a medium for developing collaboration and communication skills—two competencies strongly emphasised in the Merdeka Curriculum through the Pancasila Student Profile. From the perspective of the Merdeka Curriculum, collaboration among learners is an integral part of meaningful learning. Studies in Indonesia confirm that project-based and collaborative approaches contribute to increased student engagement, creativity, and autonomy (Samsudi et al., 2024). Thus, the use of matching games in Educaplay is a concrete implementation of the principle of collaborative learning mandated by the curriculum.

The 'Froggy Jumps' activity during the learning evaluation phase demonstrated significant development in pupils' independent learning. The majority of pupils attempted to solve the problems independently before discussing them, and when they arrived at an incorrect answer, they actively corrected their mistakes and repeated the activity to achieve a better result. This pattern of behaviour indicates the development of self-reflection skills and a focus on the process, rather than merely the final outcome. This observed pattern of independent learning aligns with the principles of Self-Determination Theory, which underpin the design of effective gamification, where well-designed game elements facilitate the fulfilment of basic psychological needs: autonomy, competence, and relatedness (Luu & Nguyen, 2025). When these needs are met, learners tend to develop intrinsic motivation and engage more deeply in the learning process. Further empirical research indicates that adaptive and gamified digital learning platforms support self-paced learning and learning autonomy (Englmeier & Contreras, 2025). Within the context of the Merdeka Curriculum, the development of learning autonomy is one of the primary objectives, in line with the vision of 'merdeka belajar' which emphasises learners' freedom and autonomy in managing their own learning process (Amiruddin et al., 2023). These findings are also consistent with research showing that the use of gamified digital resources such as Educaplay improves learners' perceptions of learning, motivation, participation and digital competence (Candel et al., 2026).

One of the most significant findings of this study is the creation of more meaningful learning. The subject matter of civic education, which was previously considered abstract, became easier to understand through a combination of visual presentations, educational games and group discussions. Learners were able to link concepts of citizenship to real-life experiences within their families, schools and communities, going beyond mere rote learning.

Meaningful learning is a core characteristic of the Merdeka Curriculum. Empirical studies confirm that authentic contexts form the foundation for the design of meaningful gamification and game-based learning (Teräs et al., 2019). When content is presented within a context relevant to pupils' lives, the conceptual understanding that develops is far more profound than that achieved through conventional learning. Reflective questions in the slideshow and discussions during the matching game serve as a bridge between abstract concepts and learners'

concrete experiences. This mechanism aligns with the constructivist theory and experiential learning that underpin SCL, where knowledge is actively constructed by students through interaction with the learning environment and content (Nunes et al., 2025). Within the context of the Merdeka Curriculum in Indonesia, meaningful learning is achieved, amongst other things, through the integration of local wisdom, real-world projects, and an interdisciplinary approach (Rosanawati et al., 2025). Educaplay, with its ability to integrate subject content with contextual interactive activities, makes a tangible contribution to realising the meaningful learning mandated by the curriculum.

The implementation of Educaplay has effectively transformed the teacher's role from that of a source of information to that of a learning facilitator. During the implementation, teachers provided guidance, facilitated group discussions, gave feedback on pupils' work, and assisted pupils who were experiencing difficulties. The aspects of learning management, the use of Educaplay, pupil engagement, and the development of national awareness were all rated as 'very good' by the observer. This shift in the teacher's role reflects the essence of SCL, which positions the teacher as a facilitator rather than the sole source of knowledge. Research within the context of the Merdeka Curriculum confirms that teacher competence and continuous professional development are key factors in the successful implementation of a student-centred curriculum (Kusumawati & Umam, 2025; Jahidi et al., 2024). Empirical research indicates that teachers who effectively integrate digital platforms are able to create a more active learning environment that is responsive to students' needs (Aldosari, 2025). However, teachers' digital readiness and competence are essential prerequisites; a lack of training is a major barrier to the adoption of learning technologies (Mauliyda et al., 2025). In this study, the effective facilitation role performed by teachers, as reflected in their excellent observation scores, indicates that the integration of Educaplay not only transformed the way students learn, but also fostered a pedagogical transformation in the teachers themselves. This is consistent with findings suggesting that technological innovations in learning are most successful when teachers are actively involved in the design and implementation processes (Saggah et al., 2020).

Overall, the findings of this study indicate that learner engagement, independent learning, collaboration and communication, meaningful learning, and the transformation of the teacher's role together form a cohesive, learner-centred learning ecosystem. Educaplay functions not merely as a digital learning platform, but as a pedagogical infrastructure that puts the principles of SCL into practice within the Merdeka Curriculum.

A Scopus literature review confirms that the most effective implementation of gamification platforms and educational games is that which integrates game elements with an evidence-based pedagogical framework, tailored to the learners' profiles and contexts (Gyedu et al., 2026; Dar et al., 2026). Educaplay, through its three complementary features interactive slideshows, matching games, and Froggy Jumps provides a varied and progressive learning experience, ranging from

independent exploration and collaboration to formative assessment. From the perspective of the Merdeka Curriculum, this study provides empirical evidence that the Educaplay platform is capable of supporting the realisation of the dimensions of the Pancasila Student Profile. Collaboration in the matching game develops the cooperative dimension; independence in the froggy jumps supports the self-reliant dimension; whilst reflective questions in the slideshow encourage critical thinking (Harjanti et al., 2026; Solehuddin et al., 2024). This study also confirms findings in the literature that gamified digital platforms are effective in addressing the main challenges in SCL implementation, namely low levels of active student engagement and the dominance of conventional teacher-centred approaches (Rachmadi et al., 2025). By combining relevant Pancasila education content with engaging game mechanics, Educaplay has successfully transformed students' learning experience from passive to active, from isolated to collaborative, and from superficial to meaningful. Nevertheless, it must be acknowledged that the effectiveness of this implementation is largely determined by teachers' readiness and the availability of technological infrastructure. As found in broader research on the implementation of the Merdeka Curriculum, limitations in teacher training and gaps in technological infrastructure, particularly in remote areas, remain challenges that need to be addressed systematically (Sianturi et al., 2025; Nurdianti et al., 2024).

CONCLUSION

The implementation of student-centred learning in the Merdeka Curriculum through the use of the Educaplay platform has proven capable of supporting the creation of a more active, interactive and meaningful learning process. Research findings indicate that the learning tools developed have a very high level of suitability, with an average validation score of 98.75%, making them suitable for use in Pancasila Education lessons.

The use of interactive slideshow, matching game, and froggy jumps features makes a tangible contribution to increasing student engagement, fostering independent learning, and strengthening collaboration and communication skills. Furthermore, the use of Educaplay helps students connect citizenship concepts with real-life experiences in their daily lives, making learning more contextual and meaningful. Furthermore, the implementation of this medium also encourages a shift in the teacher's role from being the primary source of information to acting as a facilitator who guides and supports the students' learning process.

Overall, Educaplay serves not only as a digital learning platform but also as a pedagogical tool capable of putting the principles of the Merdeka Curriculum and student-centred learning into practice. The findings of this study indicate that the integration of gamification-based technology can be an innovative alternative for improving the quality of learning, student engagement, and the development of 21st-century skills. Nevertheless, the success of its implementation still requires support in the form of teachers' digital competence and the availability of adequate

technological infrastructure so that its benefits can be optimised on a sustainable basis.

Theoretically, this study contributes to the literature on student-centred learning by demonstrating how gamification features (interactive slideshow, matching game, and Froggy Jumps) map onto specific SCL mechanisms—engagement, autonomy, collaboration, meaningfulness, and facilitation—within a competency-based curriculum reform such as the Merdeka Curriculum, thereby extending prior gamification and SCL frameworks (e.g., Salendab & Tago, 2025; Jun & Lucas, 2025) to the specific context of Pancasila and Civic Education. Practically, the findings suggest that teachers can adopt free, web-based platforms such as Educaplay as a low-cost entry point for shifting classroom practice from teacher-centred to student-centred instruction, provided that adequate digital infrastructure and teacher training are available (Mauliyda et al., 2025). Teacher professional development programmes could accordingly incorporate structured guidance on designing gamified activities aligned with specific SCL indicators rather than relying on ad hoc use of digital tools.

This study is limited by its single-site, short-duration case study design. Classroom observations were conducted over two learning sessions in one Grade X class at a single senior high school. Consequently, the findings are context-specific and should not be generalized to other schools or student populations without caution. In addition, the observation component did not include a comparison group, as its primary purpose was to document the implementation of Educaplay-based learning and students' classroom engagement rather than to compare instructional approaches. Future research is therefore encouraged to (1) employ longitudinal or quasi-experimental designs to examine the sustained effects of Educaplay-based learning on student outcomes, (2) compare its effectiveness against other gamification platforms or teacher-centred approaches, and (3) explore its implementation across diverse school contexts, including schools with limited technological infrastructure.

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