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The GASING Method From The Perspective of Ki Hajar Dewantara's Educational Philosophy

Dwi Septy Oktavina
Universitas Pendidikan Indonesia, Bandung, Jawa Barat, Indonesia
Yusuf Tri Herlambang
Universitas Pendidikan Indonesia, Bandung, Jawa Barat, Indonesia
Yunus Abidin
Universitas Pendidikan Indonesia, Bandung, Jawa Barat, Indonesia
Dede Trie Kurniawa
Universitas Pendidikan Indonesia, Bandung, Jawa Barat, Indonesia

Corresponding Author: dwiseptyoktavina@upi.edu

Abstract

The decline in students' numeracy achievement in Indonesia, as reflected in the 2022 PISA report, highlights the urgent need to improve mathematics learning strategies at the elementary level. One promising approach is the GASING Method (Easy, Fun, and Enjoyable) developed by Yohanes Surya, which offers a logical, gradual, and engaging way to teach mathematics. This study aims to examine the alignment between the GASING Method and Ki Hajar Dewantara's educational philosophy, particularly in the context of the Merdeka Curriculum. Employing a Systematic Literature Review (SLR) of ten selected articles, the findings reveal that the core principles of the among system—such as "Ing ngarsa sung tuladha, Ing madya mangun karsa, Tut wuri handayani"—are clearly embodied in the GASING approach. This method not only enhances students' conceptual understanding of mathematics in a joyful and meaningful way but also fosters character development, confidence, and learner autonomy. The integration of this method with cooperative learning models and local cultural games further demonstrates its effectiveness in supporting a humanistic and contextualized educational experience. Therefore, GASING can be positioned as a relevant pedagogical strategy that strengthens the implementation of a national education system rooted in local values and aligned with the spirit of Merdeka Belajar.

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Keywords: GASING Method, Ki Hajar Dewantara, numeracy, character education, Merdeka Curriculum

INTRODUCTION

Education is an essential foundation in shaping the character, intelligence, and identity of a nation. In Indonesia, education is seen not merely as a means of transferring knowledge, but as a humanization process aimed at developing students' creativity, feelings, and will. This view aligns with the educational philosophy put forward by Ki Hajar Dewantara, who positions students as independent individuals with unique potential that must be developed according to the nature and times (R. I. I. Putri & Suryadi, 2021). Within this framework, the educational motto "Ing ngarsa sung tuladha, ing madya mangun karsa, tut wuri handayani" reflects the role of educators as role models, motivators, and companions in the learning process. Therefore, education is truly liberating, humanistic, and oriented towards developing students' potential as a whole (Burhanuddin & Affandi, 2024).

However, national education outcomes still face serious challenges, particularly in literacy and numeracy (Niam, 2020). According to the 2022 Program for International Student Assessment (PISA) study, approximately 70 percent of Indonesian students still fall below the minimum competency standard in mathematics (Ikawati & Kowiyah, 2021). This indicates a low level of students' mastery of basic concepts and critical thinking skills, even though these two aspects are essential foundations for 21st-century learning, which demands logical, reflective, and analytical thinking (Najah & Jamaluddin, 2024). This fact demonstrates a gap between the direction of national education policy, which emphasizes a humanistic approach and meaningful learning, and the reality of implementation in the field, which is still dominated by mechanistic, rote, and procedural approaches (Novferma et al., 2023). This disparity provides a crucial basis for the need to develop innovative learning models that not only emphasize mastery of material but also encourage active student engagement in critical and reflective thinking processes (Deda et al., 2022).

This gap demands innovation in learning strategies, particularly in mathematics, that integrate conceptual skills with the holistic development of students' character. Addressing this challenge requires learning strategies that address cognitive aspects while considering other dimensions of the learning process, while also being contextualized with the nation's cultural values (Rahayu & Manuel, 2024). One relevant and innovative approach is the GASING (Easy, Fun, and Enjoyable) method, developed by Yohanes Surya. This method aims to simplify the

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mathematics learning process through logical and enjoyable stages, without requiring students to memorize mechanically (Azahra et al., 2024). GASING facilitates gradual learning from the concrete to the abstract, enabling students to understand basic mathematical concepts such as multiplication and division more deeply (Sunzuma et al., 2022).

Not only does it function as a cognitive approach, the GASING method also contributes to fostering self-confidence and independent thinking skills in students. This aligns with Ki Hajar Dewantara's idea that education is an effort to shape a holistic, independent human being, both intellectually and morally (Kadarisma & Juandi, 2021). In practice, the GASING method emphasizes active student involvement, meaningful interactions between teachers and students, and a joyful learning environment, all of which represent the values of Taman Siswa education (Ramadhan et al., 2024).

More than just a cognitive strategy, the GASING Method also contributes to building students' self-confidence and independent thinking. This approach aligns with Ki Hajar Dewantara's view that education is a process of humanizing humans, namely shaping individuals who are intellectually and morally independent. This concept is reflected in the idea that education must provide students with the freedom to develop according to their nature and the times (N. R. Z. Putri et al., 2023). In its implementation, the GASING method emphasizes active student involvement, meaningful interactions between teachers and students, and the creation of a pleasant learning environment (Damopolii et al., 2024). These elements align with the core values of Taman Siswa education, which positions teachers as mentors and students as fully valued learning subjects (Ekasari, 2023).

Based on the background explanation that has been presented, this study is specifically directed to analyze conceptually the application of the GASING Method (Easy, Fun, and Enjoyable) as an alternative approach to mathematics learning in the perspective of Ki Hajar Dewantara's educational philosophy (Gou et al., 2024). This method not only offers ease in mastering basic mathematical concepts through a fun and gradual approach, but also represents the fundamental values of national education, such as freedom of learning, respect for children's nature, and the formation of independent characters (Siagan et al., 2019). This study uses a Systematic Literature Review (SLR) approach to comprehensively examine the potential of the GASING Method as a contextual, humanistic learning approach, and in line with the principles of Tamansiswa education (Peng et al., 2020). Values such as "Ing ngarsa sung tuladha, ing madya mangun karsa, tut wuri handayani" are used as the main reference in evaluating the extent to which this method is appropriate to the ideals of national education rooted in the nation's culture (Lattuserimala et al.,

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2020). This study is expected to contribute ideas in designing a mathematics learning model that not only focuses on academic results, but also emphasizes the importance of a humanistic educational process, rooted in cultural values, and reflects the nation's identity (Hijriani & Simarmata, 2023).

METHOD

This study uses the Systematic Literature Review (SLR) method as its primary approach. This method is a systematic, structured, and replicable literature review strategy aimed at identifying, critically evaluating, and synthesizing findings from various previous studies relevant to the research topic (Nguyen et al., 2024). This approach provides a foundation for researchers to develop a comprehensive, evidence-based understanding of the issue or phenomenon being studied (Kusuma et al., 2018).

The SLR implementation process follows certain methodological stages designed to ensure the validity and reliability of the selected literature sources (Kadarisma et al., 2019). In this study, the Systematic Literature Review (SLR) approach is utilized to examine the relationship between the application of the GASING Method in mathematics learning with the main values contained in Ki Hajar Dewantara's educational philosophy, especially principles such as "Ing ngarsa sung tuladha, ing madya mangun karsa, tut wuri handayani" (OECD, 2023). The initial step in implementing the Systematic Literature Review (SLR) begins with formulating the focus of the research question, namely: "How is the GASING Method compatible with Ki Hajar Dewantara's educational principles in the context of mathematics learning?" This question becomes the basis for determining the article selection criteria, both inclusion and exclusion criteria, so that only sources that are relevant and in accordance with the focus of the study are included in the analysi (Prayitno, 2020).

The next stage involved searching the literature through academic search engines such as Google Scholar, Garuda, and the Directory of Open Access Journals (DOAJ). To support the effectiveness of the search, the researcher also utilized Publish or Perish software as a tool in managing and evaluating the search results (Umbara et al., 2022). The keywords applied in the literature search process included: “GASING Method”, “Educational Philosophy of Ki Hajar Dewantara”, “Elementary School Numeracy”, and “Character Education”. The search scope was limited to publications published between 2020 and 2024 to ensure the currency and relevance of the sources to the context of current educational problems. From the initial search results, 20,060 articles were obtained which were then filtered based on their level of relevance and

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suitability to the focus and objectives of the research (Novriani & Yuanita, 2017). The filtering process was carried out by considering several criteria, including: the article must contain a discussion of the GASING Method, both from a conceptual and applied perspective; include Ki Hajar Dewantara's thoughts, both explicitly and implicitly; and published in peer-reviewed and academically recognized scientific journals. Popular articles that were opinion-based, not data-based, or not peer-reviewed were excluded from the analysis. This selection process was based on the principles of openness, rigor, and transparency, as recommended in the Systematic Literature Review guidelines by Tranfield, Denyer, and Smart (2003), to ensure the credibility and accountability of the study results.The final results of the screening process yielded ten articles deemed most relevant and of high academic quality based on pre-established criteria. The selected articles were then analyzed using a qualitative-descriptive approach through thematic analysis. The primary focus of this analysis was directed at identifying shared values, conceptual intersections, and meaningful relationships between the GASING learning approach and national education principles rooted in local culture, particularly the values in the thought of Ki Hajar Dewantara.

To ensure transparency in the literature selection process, the search and screening stages were visualized using a PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) diagram. This diagram systematically represents the stages of searching, screening, and selecting literature carried out during the Systematic Literature Review process (Herpratiwi & Tohir, 2022). The use of a PRISMA diagram aims to increase accountability and replication of the review process by presenting information in a concise and structured manner.

Overall, this research provides an important contribution to the formulation of a mathematics learning approach that focuses not only on cognitive aspects but also encourages character building and the internalization of cultural values in students. The results of the study indicate that the GASING Method has the potential to be an effective, enjoyable, and contextual alternative for implementing Ki Hajar Dewantara's educational philosophy in elementary schools (Alabekee et al., 2015).

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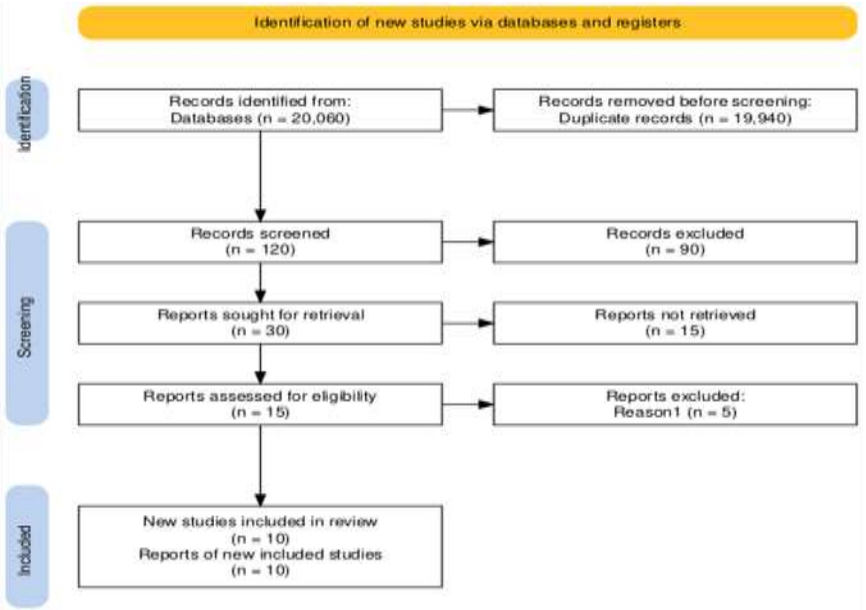


Figure 1. Prisma Flowchart

RESULTS AND DISCUSSION

Research Result

The table presented in this section is a synthesis of various studies examining the relationship between the GASING (Easy, Fun, and Enjoyable) Method and the educational principles proposed by Ki Hadjar Dewantara (KHD). These studies adopted a variety of methodological approaches, ranging from philosophical analysis and conceptual studies to empirical research at the elementary school level. All aim to examine the relevance of the GASING Method within an educational framework rooted in national culture and based on the principle of freedom to learn as proposed by KHD (Irham et al., 2017).

The study results show that the GASING Method, designed to simplify mathematical concepts and create a fun and systematic learning environment, is philosophically aligned with the KHD educational ideals. This method specifically reflects core values such as student liberation, developing their inherent potential, and creating a learning environment that encourages active engagement (Simamora et al., 2022). In practice, GASING positions students as active subjects in the learning process, empowered to understand concepts gradually—from the concrete to the abstract—rather than simply memorizing formulas mechanically.

Furthermore, several studies have highlighted the contribution of the GASING Method to strengthening 21st-century skills, including critical thinking, independence, self-confidence, and creativity (Dzul S., 2024). Through a visual, logical, and step-by-step approach, this method builds

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strong conceptual understanding and encourages constructive problem-solving. The enjoyable learning environment also plays a role in shaping students' positive attitudes toward mathematics, which was previously often associated with a difficult and stressful subject.

Siregar's (2022) findings indicate that combining the Teams Games Tournaments (TGT) learning model with the GASING method significantly improves mathematics learning outcomes. These findings are supported by research by Maulida, Isrokatun, and Julia (2024), who found that implementing the GASING method significantly improved understanding of the concept of two-digit multiplication, with N-Gain values in the moderate to high category.

Furthermore, research conducted by Devi (Zahroh, 2023) which integrated the GASING method with local traditional games, demonstrated increased student enthusiasm for numeracy learning. This approach not only supports academic achievement but also fosters healthy collaboration and social interaction in the classroom.

Furthermore, findings from Ekasari (Pratiwi & Artika, 2023) indicate that learning using the GASING approach has a positive impact on students' cognitive and affective development. Students involved in this learning experience increased self-confidence, active involvement in the learning process, and a high level of interest in mathematics.

Table 1. Journal Synthesis

No	Title Journal	Writer	Research purposes	Results Study	Relevance to the Topic
1.	"The Effect of the Modified TGT (Teams Games Tournament) Learning Model with the Gasing Method on Students' Mathematics Learning Outcomes"	Rahmi Diah Nurdiana Siregar	The main objective of this study is to determine whether there is an influence of the TGT (Teams Games Tournament) learning model modified with the Gasing Method on the	The application of the TGT learning model modified with the Gasing method has been proven to have a significant impact on improving students' mathematics learning outcomes. The average score increased from 56.84 before treatment to	This article is highly relevant to the discussion on the importance of innovation in mathematics learning methods in elementary schools, particularly in the context of numeracy literacy and student character development. This study provides empirical evidence that combining the cooperative learning model (TGT) with the Gasing

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			mathematics learning outcomes of third-grade students of Muhammadiyah 06 Elementary School Medan. This study also aims to provide solutions to the low mathematics learning outcomes of students, especially on the material of multiplication of whole numbers.	80.00 after treatment. The Wilcoxon test results showed a significance of 0.000, indicating a significant difference. Meanwhile, the N-Gain value of 0.6241 is in the moderate category, indicating a significant improvement in learning.	Method, which emphasizes easy, fun, and enjoyable learning, can improve students' mathematics learning outcomes. The results of this study are also in line with Ki Hajar Dewantara's idea of education that respects children's nature, prioritizes independence, and creates a fun and meaningful learning atmosphere. Furthermore, these findings support efforts to develop contextual and innovative learning models that are down-to-earth, as idealized in the national education philosophy.
2.	Ki Hajar Dewantara's Educational Philosophy as the Foundation of Vocational Education in the Independent Curriculum Era	Deasy Irawati, Siti Masitoh, Mochamad Nursalim	The main objective of this research is to examine and analyze how Ki Hajar Dewantara's educational philosophy can be used as a foundation for the development and	philosophy emphasizes the importance of fulfilling students' needs and developing their potential optimally through the Pamong and Among system, with the motto Ing Ngarso Sung Tulodho, Ing Madya Mbangun Karso, Tut	This article has a strong connection with the discussion regarding the essence of pedagogy in the view of Ki Hajar Dewantara, as well as its relevance to educational practices in the modern era.

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			implementation of vocational education in Indonesia, particularly in the era of the Independent Curriculum. This research also aims to explore the relevance and embodiment of Ki Hajar Dewantara's principles, such as the Pamong and Among system and the motto Ing Ngarso Sung Tulodho, Ing Madya Mbangun Karso, Tut Wuri Handayani, in the practice of student-centered vocational learning.	Wuri Handayani. • These principles are implemented in student-centered learning, thus creating harmony between creativity, feeling, intention, and character.	
3.	Ki Hadjar Dewantara's Educational Philosophy: The Basis for Independent	Gregory Bambang Nugroho	This article aims to explore and analyze Ki Hadjar Dewantara's educational philosophy. as	The KHD philosophy emphasizes education as a process of humanizing humans, based on the	This article is highly relevant to the study of the application of Ki Hadjar Dewantara's thinking in the context of 21st-century education and the

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	Learning to Develop Indonesians with Character		well as explains how these values form the basis of the Independent Learning policy, especially in the context of producing intelligent and characterful Indonesian people in accordance with the values of Pancasila.	principles of freedom, balance between creativity, feeling, and intention, and learning that frees students from pressure and coercion. The concept of "Freedom to Learn" is a concrete manifestation of the KHD philosophy, which emphasizes contextual, joyful, and student - *centered learning.*	Independent Curriculum. It emphasizes that Ki Hadjar Dewantara's ideas remain highly relevant and applicable in today's education landscape, particularly in the implementation of the Independent Curriculum. This paper furthers the argument that education in Indonesia must be grounded in cultural values, respect the natural rights of children, and support freedom and responsibility in the learning process.
4.	Ki Hadjar Dewantara's Educational Philosophy in Liberating Education	Dahlia	This article aims to conceptually examine Ki Hadjar Dewantara's educational philosophy, particularly in the context of liberating education and how these values can form a just, inclusive education system	Ki Hadjar Dewantara's educational philosophy was comprehensive and centered on humanity, emphasizing a balance between intellectual, moral, social, and spiritual aspects. He viewed education not solely as a pursuit of	This article is highly relevant to a variety of current educational contexts, in particular: Independent Curriculum: The principles of Independent Learning are rooted in KHD's ideas about freedom in learning and respect for children's natural abilities. This article reinforces the need for current education policies to remain grounded in the local

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			and empower students to become caring, responsible, and critical-thinking citizens.	academic achievement but also as a means of shaping the character and social awareness of students. Through the Taman Siswa system, KHD championed inclusive education that supported marginalized groups, including women and children, and rejected all forms of oppression in the learning process.	and national values inherited from figures like KHD.
5.	Implementation of Ki Hadjar Dewantara's Educational Philosophy in the Deep Learning Curriculum	Ramzi Al Bani Tariq, Dya Qurotul A'yun	*Conceptually examine how Ki Hadjar Dewantara's educational philosophy can be applied in a deep learning technology-based curriculum,* so that the educational process maintains humanistic values and national	KHD's educational philosophy is holistic and humanistic, encompassing character development (morals), intellectual intelligence, and physical fitness. *Deep learning* as a part of artificial intelligence offers potential in personalizing learning, but its use	This article is especially relevant for topics related to: Integration between locally based character education and cutting-edge technology. Implementation of the Independent Curriculum which is flexible, contextual, and emphasizes student - centered learning. Vocational education or numeracy literacy, where the use of technology such

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			character even in a digital and modern context.	must be aligned with human values, not just technological efficiency. The Independent Curriculum and *deep learning* have a meeting point with the Among System principle (Ing Ngarsa Sung Tuladha, Ing Madya Mangun Karsa, Tut Wuri Handayani), where teachers act as guides who encourage student independence.	as deep learning can support personalized learning, but must still be based on cultural and humanitarian values ala KHD.
6.	Analysis of the Implementation of Numeracy Activities using the Gasing Mathematical Method Linked to Traditional Games in Class 4	Ni Kadek Lespita Devi	The purpose of this study was to analyze the implementation of numeracy activities using the Gasing Mathematics Method associated with traditional games for fourth-grade students of SD N 1 Demulih. This	Before the new approach was implemented, numeracy learning was still conventional and lacked active student engagement, resulting in low interest in mathematics. However, after the Gasing Method was combined with	This research aligns with the core values of Ki Hadjar Dewantara's educational philosophy, particularly in prioritizing liberating, enjoyable, and student-centered learning, as reflected in the *Tut Wuri Handayani principle.* The integration of traditional games into numeracy learning also reflects an approach based on students' local potential and

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	Students of SD N 1 Demulih		study aimed to examine the impact of this combination of approaches on understanding mathematical concepts, student participation, and learning motivation.	traditional games such as poh-pohan, gowak-gowakan, and meyong-meyongan, there was a significant increase in understanding of numeracy concepts, particularly in basic arithmetic operations. Students become more enthusiastic and active, demonstrating greater speed and accuracy in calculations. The learning environment becomes more enjoyable, collaborative, and supports the development of social skills such as cooperation and communication among students.	culture. Furthermore, this method aligns with the humanistic and contextual approach in the Independent Curriculum, which emphasizes learning relevant to students' lives and environments. Values such as collaboration, independence, and the spirit of mutual cooperation are fostered through learning activities packaged in the form of educational games.
7.	Improving Learning	Desita Ekasari	This study aims to determine the	shows a significant increase in students'	This research has strong relevance in two main

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	Achievement of Flat Shape Perimeter with the Spinning Top Method Game for Grade III Students of Padi Tulakan 1 Elementary School, Pacitan, 2022/2023 Academic Year		increase in student learning achievement and activities after the application of the Gasing Mathematics method to the material on the circumference and area of flat shapes in class III of SDN 1 Padi Tulakan Pacitan.	cognitive and affective aspects after using the Gasing method in mathematics learning.	contexts, namely the educational philosophy of Ki Hadjar Dewantara And Implementation of the Independent Curriculum. From KHD's perspective, the use of the Gasing Method aligns with the *Tut Wuri Handayani principle,* as it encourages the creation of a learning environment that is easy to understand, enjoyable, and non-burdensome for students. This approach also supports the educational values *of Among,* which emphasize the importance of independent learning, the meaningfulness of the educational process, and the optimal development of student potential.
8.	The Effect of TGT Cooperative Learning with the GASING Method on the Understanding of Mathematica	Shelly Ainun Maulida, I. Isrokatun, J. Julia	This study aims to determine the effectiveness of the application of the TGT cooperative learning model in collaboration with the GASING method. in	The results showed that students in the experimental class experienced a higher increase in conceptual understanding compared to the control class. The average n-gain value	This research has strong relevance to the educational values developed by Ki Hadjar Dewantara and the principles of the Independent Curriculum. Within the framework of KHD's educational philosophy, the GASING method reflects the among

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	l Concepts of Two-Digit Multiplicatio n in Elementary Schools		improving the understanding of the mathematical concept of two-digit multiplication in elementary school students.	in the experimental class reached 0.56, classified as medium to high, while the control class only obtained 0.26. Analysis using the Mann-Whitney test strengthened this finding by showing a significant difference between the two groups ($p < 0.05$). The TGT learning model encourages active student involvement through healthy cooperation and competition, while the GASING Method helps students understand multiplication concepts gradually and logically, starting from the concrete to the abstract.	system that emphasizes freedom of learning, curiosity, and respect for the diversity of student abilities. The *Tut Wuri Handayani principle* is also evident in the teacher's role as a companion who fosters student independence and active learning. Furthermore, this approach aligns perfectly with the spirit of the Independent Curriculum, which prioritizes student-centered, differentiated, and contextual learning. The integration of games and the GASING method not only enhances conceptual understanding but also fosters important values within *the Pancasila student profile,* such as mutual cooperation, critical thinking, and creativity.
9.	Freedom to Learn from the Perspective of Ki Hajar Dewantara	Rini Budiwati , Endang Fauziati	This article aims to review and analyze the idea of Independent Learning from Ki Hajar	The concept of Freedom to Learn strongly aligns with Ki Hajar Dewantara's educational principles, which	This article is highly relevant to current educational dynamics because it directly links the Merdeka Belajar policy to the educational values championed by Ki

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			Dewantara's philosophical perspective, as well as how these principles can be implemented in today's Indonesian education world to make it more humanistic, liberating, and relevant to the characteristics of students.	emphasize the importance of supporting students to develop naturally without pressure. For KHD, education is a cultural process that creates a balance between creativity, feeling, and will, while also helping children discover their true selves according to their nature and the times. The Among system and mottos like " *Ing ngarsa sung tuladha, ing madya mangun karsa, tut wuri handayani"* serve as guidelines for creating a meaningful, active, and liberating learning process. KHD's perspective also positions education as a holistic endeavor, encouraging freedom of thought,	Hajar Dewantara. **This** humanistic and progressive approach has proven to remain contextual in addressing the needs of modern learning. The emphasis on the teacher's role as a mentor, not a classroom leader, also fosters an active, reflective learning environment and encourages student independence. Furthermore, this article provides a solid philosophical foundation for designing a curriculum that is student-centered, rooted in local culture, and fully values the diversity and potential of students.

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				strengthening moral values, and preserving local culture in learning practices.	
10.	Analysis of Ki Hadjar Dewantara's Educational Philosophy as a Foundation in Elementary Schools to Achieve Joyful Learning	Ningrum Novita Rahayu, Dya Qurotul A'yun	Analyzing the relevance and contribution of Ki Hadjar Dewantara's educational philosophy as a basis for developing joyful learning. in elementary schools, as well as how principles such as *the Three Centers of Education* and *Tut Wuri Handayani* can be implemented to support students' character, cognitive, and social-emotional development.	philosophy prioritizes a holistic approach that places students at the center of learning, balancing knowledge, attitudes, and skills. The concept of the Three Centers of Education —family, school, and community—is considered crucial in creating meaningful and supportive learning experiences. The Tut Wuri Handayani principle allows students the freedom to develop according to their potential and interests, without any inhibiting pressure. The Joyful	philosophy emphasizes the importance of a holistic approach that places students at the center of the learning process, with attention to the balance between knowledge, attitudes, and skills. The concept of the Three Centers of Education — involving the active roles of family, school, and community—is seen as a key element in creating deep and meaningful learning. Through the *Tut Wuri Handayani principle,* students are given space to grow according to their interests and abilities without pressure. This aligns with the concept of Joyful Learning, which encourages a positive, active, and enjoyable learning environment. Beyond academic aspects, this

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				Learning concept, which emphasizes a comfortable and enjoyable learning environment, aligns with the "among" approach, as viewed by KHD. Beyond academic achievement, education also needs to instill moral and ethical values, as well as the ability to collaborate and think critically to shape a resilient and characterful generation.	approach also encourages character development by strengthening moral values, ethics, collaboration, and critical thinking skills necessary for the 21st century.

From the results of a systematic review of ten scientific articles, it can be concluded that there is a strong relationship between the GASING (Easy, Fun, and Enjoyable) learning approach and the basic principles in Ki Hadjar Dewantara's (KHD) educational philosophy. Both have the same fundamental values, especially in creating a learning process that is fun, liberating, and focused on student development (Munir & Awiria, 2020).

Several studies have shown that the consistent use of the GASING Method has a positive impact on improving students' numeracy skills, particularly in understanding basic mathematical concepts such as addition, subtraction, multiplication, and division. GASING's concrete, structured, and progressive characteristics—and its move away from rote memorization—provide a more enjoyable and meaningful learning process. This approach aligns with the thinking of Ki Hadjar Dewantara, who views education as an effort to shape a complete human being, without

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pressure, and enabling the development of students' creativity, feelings, and wil (Dianingsig et al., 2024).

Furthermore, the integration of the GASING method with cooperative learning models such as Team Games Tournament (TGT) and traditional games has shown positive results not only in academic aspects but also in strengthening students' character. Students become more active, confident, and trained in cooperation and demonstrating tolerance. These values align with the concept of the among system and the motto "Tut Wuri Handayani," where teachers act as mentors who encourage the growth of independence in learning (Dewantara, 1997).

The implementation of the GASING Method in the Independent Curriculum is considered appropriate because it supports the principles of learning differentiation and a project-based approach (Fitriani et al., 2023). This method is flexible and adaptive, allowing it to be combined with modern technology and elements of local wisdom that reflect the culture of students (Nurhayati, 2019). Several studies show that KHD educational values can remain the foundation for designing technology-based learning such as deep learning, as long as they prioritize humanistic aspects and national character (Destiana et al., 2024).

In other words, the overall results of this literature review indicate that the GASING Method is not only an effective approach to mathematics teaching, but also based on a philosophical foundation that aligns with national education principles (Sugiarta et al., 2019). This method harmoniously combines innovation in learning practices with local cultural values, thus having great potential to support the transformation of education in Indonesia towards the formation of a generation that is knowledgeable, has strong character, and is able to face future challenges (Niyarci, 2022).

DISCUSSION

Several studies indicate a strong link between the GASING approach and the educational principles developed by Ki Hadjar Dewantara. The GASING method, which prioritizes simple, fun, and engaging mathematics learning, is considered aligned with the among concept, which emphasizes the view that students are active and independent subjects in the learning process (Anggraini & Wiryanto, 2022). This approach is structured in stages from concrete experiences to abstract understanding, and avoids rigid memorization techniques, thus creating a meaningful and humanistic learning process. These values align with the spirit of Tut Wuri Handayani, where the role of educators is to guide from behind, providing support to foster student independence.

Several studies, such as those conducted by Nugroho (2023) and Budiwati and Fauziati

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(2022), confirm that the core values of Ki Hadjar Dewantara's teachings—independence of thought, contextual learning, and character development—can be effectively implemented through the GASING Method (Sunarya et al., 2022). Within the context of the Independent Curriculum, which emphasizes joyful learning, differentiated learning, and student independence, this method serves as a strategic alternative that bridges traditional values with modern learning approaches (Yaqin et al., 2024a).

An article by Dahlia (Yaqin et al., 2024b) also emphasizes the importance of culturally-based learning. In this context, the application of the GASING method combined with traditional games has proven effective in developing contextual numeracy literacy rooted in national culture (Musanna, 2017). This approach also shifts the teacher's role from a central source of information to a facilitator and learning companion, aligning with the Tut Wuri Handayani principle and the among system, which prioritizes role models, mentoring, and encouragement to develop students' potential according to their nature and interests (Sandra & Juniar, 2021).

Thus, this study confirms that the GASING method is not only effective as a mathematics learning strategy but also serves as a vehicle for implementing national educational values based on culture, character, and humanism. The integration of the GASING approach and Ki Hadjar Dewantara's educational philosophy can provide a strong foundation for developing learning models relevant to the direction of 21st-century educational transformation in Indonesia

CONCLUSION

A systematic review of several articles shows a close relationship between Ki Hadjar Dewantara's educational philosophy and the application of the GASING Method in mathematics learning. KHD's basic educational principles—such as liberating, learner-oriented learning, and respect for each individual's unique nature and potential—are implemented in the GASING Method's concrete, gradual, and enjoyable characteristics in conveying mathematical concepts to students.

The GASING method can practically improve mastery of basic mathematical concepts through a logical and systematic approach. In addition to supporting conceptual understanding, this method also strengthens students' affective aspects, such as self-confidence, courage in critical thinking, and active engagement in the learning process.

The implementation of the GASING Method in the context of collaborative and game-based learning shows a significant contribution to the development of social abilities and character formation of students, which is in line with the vision of holistic education. This

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approach is not only effective in improving numeracy competencies, but also supports the creation of a learning environment that is inclusive, meaningful, and appropriate to the context of students' lives.

Conceptually and implementably, the GASING Method can be positioned as a learning strategy aligned with the direction of national education transformation. This approach supports the development of independent learning, adapting to the challenges of the times, and rooted in national cultural values. It also serves as a response to the needs of 21st-century education, which demands innovation, character, and meaningfulness in the learning process.

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REFERENCES

Alabekee, E. C., Samuel, A., & Osaat, S. D. (2015). Effect Of Cooperative Learning Strategy On Students Learning Experience And Achievements In Mathematics. International Journal Of Education Learning And Development, 3(4), 67–75.

Anggraini, G. O., & Wiryanto, W. (2022). Analysis Of Ki Hajar Dewantara's Humanistic Education In The Concept Of Independent Learning Curriculum. Jurnal Penelitian Ilmu Pendidikan, 15(1), 33–45. Https://Doi.Org/10.21831/Jpipfip.V15i1.41549

Azahra, Z., Siregar, A. F., Alfarisi, M., & Wandini, R. R. (2024). The Importance Of Mathematics Learning In Developing Early Childhood Numeracy Skills. Jurnal Prinsip Pendidikan Matematika, 7(1), 80–87. Https://Doi.Org/10.33578/Prinsip.V7i1.227

Burhanuddin, A., & Affandi, A. (2024). Mathematics Anxiety And Self-Efficacy Among Junior High School Students. Proceedings Of The 2023 Eai International Conference On Education And Learning, 9(1), 98–105. Https://Doi.Org/10.4108/Eai.18-7-2023.2343390

Damopolii, J. K., Rorimpandey, W., & Ester, K. (2024). Penggunaan Metode Gasing Dalam Meningkatkan Hasil Belajar Matematika Operasi Hitung Perkalian. Jiwp, 10(3), 1042–1052.

Deda, Y. N., Disnawati, H., & Yulita, D. (2022). Pendampingan Anak Sekolah Minggu Melalui Bimbingan Belajar Gasing Untuk Mengatasi Learning Loss Akibat Pandemi Covid-19. Bakti Cendana, 5(2), 51–57. Https://Doi.Org/Https://Doi.Org/10.32938/Bc.5.2.2022.12-18

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-Share Alike 4.0 International License

Destiana, A., Nopriani, H., Siliani, O., Novita, W., & Annur, S. (2024). Analisis Implementasi Kurikulum Merdeka Yang Relevan Terhadap Konsep Pendidikan Ki Hajar Dewantara. Didaktik: Jurnal Ilmiah Pgsd Stkip Subang, 10(2), 326–338. Https://Doi.Org/Https://Doi.Org/10.36989/Didaktik.V10i2.3072

Dewantara, K. H. (1997). Bagian Pertama Pendidikan. 1, 215.

Dianingsig, D., Nurkhasanah, N., Anisah, R., Harni, H., & Soedjono, S. (2024). Analisis Implikasi Konsep Sistem Among Dan Trikon Pendidikan Ki Hajar Dewantara Di Madrasah Ibtidaiyah. Jurnal Inovatif Manajemen Pendidikan Islam, 3(2), 199–211.

Dzul S., S. . J. (2024). Konsep Dan Aplikasi Pemikiran Ki Hajar Dewantara Dalam Pendidikan Karakter Di Era 5.0. Jurnal Teknologi Pendidikan, 17–26.

Ekasari, D. (2023). Meningkatan Prestasi Belajar Keliling Bangun Datar Dengan Permainan Dan Metode Gasing Pada Siswa Kelas Iii Sdn I Padi Tulakan Pacitan Tahun Pelajaran 2022/2023. Pendas: Jurnal Ilmiah Pendidikan Dasar, 8(1), 2174–2184. Https://Doi.Org/Https://Doi.Org/10.23969/Jp.V8i1.8320

Fitriani, H., Suastra, I. W., & Atmaja, A. W. T. (2023). Critical Study : Independent Curriculum From The Perspective Of Educational Philosophical Schools And The Philosophy Of Ki Hajar Dewantara. Empiricism Journal, 4(2), 585–597. Https://Doi.Org/10.36312/Ej.V4i2.1645

Gou, M. F. T., Aje, A. U., & Seto, S. B. (2024). Penerapan Metode Gasing Dalam Pembelajaran Matematika Untuk Meningkatkan Minat Dan Hasil Belajar Siswa. Jupika: Jurnal Pendidikan Matematika, 7(2), 119–127.

Herpratiwi, & Tohir, A. (2022). Learning Interest And Discipline On Learning Motivation. International Journal Of Education In Mathematics, Science, And Technology, 10(2), 424–435. Https://Doi.Org/10.46328/Ijemst.2290

Hijriani, L., & Simarmata, J. E. (2023). Pelatihan Matematika Gasing Bagi Siswa. Jmm: Jurnal Masyarakat Mandiri, 7(2), 1425–1434.

Ikawati, O. N., & Kowiyah, K. (2021). Visual, Auditory, And Kinesthetic Learning Model On The Mathematics Problem Solving Ability. Desimal: Jurnal Matematika, 4(1), 13–20. Https://Doi.Org/10.24042/Djm.V4i1.7362

Irham, S. M., Mr., M., & Oktavia, B. (2017). The Development Of Guided Inquiry-Based Worksheet On Colligative Properties Of Solution For Chemistry Learning. Proceedings Of The 2016 International Conference On Mathematics And Science Education, 38–42. Https://Doi.Org/10.2991/Icmsed-16.2017.9

Kadarisma, G., & Juandi, D. (2021). Mathematics Learning For Students With Special Needs During

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-Share Alike 4.0 International License

The Covid-19 Pandemic. Journal Of Physics: Conference Series, 2123(1), 012008. Https://Doi.Org/10.1088/1742-6596/2123/1/012008

Kadarisma, G., Rosyana, T., & Nurjaman, A. (2019). The Influence Of Interest In Learning Mathematics Toward Mathematical Reasoning Ability Of Smp Students. Jurnal Absis : Jurnal Pendidikan Matematika Dan Matematika, 2(1), 121–128. Https://Doi.Org/10.30606/Absis.V2i1.206

Kusuma, M. W. K., Jampel, I. N., & Bayu, G. W. (2018). Pengaruh Metode Pembelajaran Matematika Gasing Terhadap Hasil Belajar Matematika. Jurnal Pedagogi Dan Pembelajaran, 1(1), 37–47.

Lattuserimala, V., Moma, L., & Gaspersz, M. (2020). Perbedaan Hasil Belajar Siswa Dengan Menggunakan Model Pembelajaran Problem Based Learning Dan Model Pembelajaran Kooperatif Tipe Think Talk Write. Sora Journal Of Mathematics Education, 1(1), 29–33. Https://Doi.Org/Https://Doi.Org/10.30598/Sora.V1.I1.P29-33

Munir, Z. A., & Awiria, A. (2020). Implementasi Pendidikan Nilai Melalui Permainan Tradisional Anak Suku Sasak Di Mi Nw Loang Sawak Lombok Tengah. Taman Cendekia: Jurnal Pendidikan Ke-Sd-An, 4(1), 397–403. Https://Doi.Org/10.30738/Tc.V4i1.5764

Musanna, A. (2017). Indigenisasi Pendidikan: Rasionalitas Revitalisasi Praksis Pendidikan Ki Hadjar Dewantara. Jurnal Pendidikan Dan Kebudayaan, 2(1), 117–133. Https://Doi.Org/10.24832/Jpnk.V2i1.529

Najah, W. S., & Jamaluddin, M. (2024). Analysis Of Students' Errors In Solving Contextual Problems Based On The Learning Style. Riemann: Research Of Mathematics And Mathematics Education, 6(2), 234–245. Https://Doi.Org/10.38114/B2r7kd76

Nguyen, H. T. M., Nguyen, G. T. C., Thai, L. T. H., Truong, D. T., & Nguyen, B. N. (2024). Teaching Mathematics Through Project-Based Learning In K-12 Schools: A Systematic Review Of Current Practices, Barriers, And Future Developments. Tem Journal, 13(3).

Niam, S. (2020). Pengaruh Kombinasi Metode Pembelajaran Gasing Dan Realistic Mathematics Education (Rme) Terhadap Prestasi Belajar Matematika Pada Siswa Sdn 2 Sekuro Jepara. Prosiding Konstelasi Ilmiah Mahasiswa Unissula (Kimu) Klaster Humanoira.

Niyarci, N. (2022). Perkembangan Pendidikan Abad 21 Berdasarkan Teori Ki Hajar Dewantara. Pedagogika: Jurnal Ilmu-Ilmu Kependidikan, 2(1), 47–55.

Novferma, N., Romundza, F., & Yenzi, I. P. (2023). Analysis Of Students' Mathematical Literacy Ability Through Mathematics Comics Based On Problem-Based Learning. Edumatica: Jurnal Pendidikan Matematika, 13(3), 224–233.

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Https://Doi.Org/10.22437/Edumatica.V13i03.29309

Novriani, M. R., & Yuanita, F. (2017). Analisis Kemampuan Penalaran Matematika Melalui Metode Gasing. Semnastika Unimed.

Nurhayati, D. U. (2019). Gagasan Ki Hajar Dewantara Tentang Kesenian Dan Pendidikan Musik Di Tamansiswa Yogyakarta. Promusika: Jurnal Pengkajian, Penyajian, Dan Penciptaan Musik, 7(1), 11–19.

Oecd. (2023). Pisa 2022 Results (Volume Ii): Learning During – And From – Disruption. In Oecd Publishing: Vol. Ii.

Peng, A., Cao, L., & Yu, B. (2020). Reciprocal Learning In Mathematics Problem Posing And Problem Solving: An Interactive Study Between Canadian And Chinese Elementary School Students. Eurasia Journal Of Mathematics, Science And Technology Education, 16(12), Em1913. Https://Doi.Org/Https://Doi.Org/10.29333/Ejmste/9130

Pratiwi, I., & Artika, A. (2023). Relevansi Filsafat Ki Hajar Dewantara Dalam Pendidikan Matematika Di Era Evolusi Industri 4.0 (Society 5.0). Jurnal Multidisiplin Indonesia, 2(9), 2738–2748.

Prayitno, S. H. P. (2020). Upaya Meningkatkan Hasil Belajar Matematika Siswa Kelas Viii-F Smp Negeri 22 Surabaya Melalui Penerapan Model Pembelajaran Problem Based Learning Tahun Pelajaran 2018-2019. Jurnal Edukasi: Kajian Ilmu Pendidikan, 6(2), 158–169. Https://Doi.Org/10.51836/Je.V6i2.99

Putri, N. R. Z., Sari, S. Y., Hidayati, H., & Dewi, W. S. (2023). The Effect Of Student Facilitator And Explaining (Sfae) Cooperative Learning Model On Physics Student's Achievement. Pillar Of Physics Education, 16(1), 88. Https://Doi.Org/10.24036/14179171074

Putri, R. I. I., & Suryadi, D. (2021). Students' Mathematics Anxiety And Its Impact On Learning Outcomes In Elementary School. Journal Of Mathematics Education, 6(1), 28–39.

Rahayu, N. A., & Manuel, G. (2024). Penerapan Metode Gasing Terhadap Hasil Belajar Siswa Pada Konsep Perkalian. Pedagog, 2(2), 31–38. Https://Jurnal.Stkipkw.Ac.Id/Index.Php/Pji/Article/View/92%0a

Ramadhan, M. Z., Setyawan, A., & Widayati, S. (2024). Pengaruh Metode Gasing Terhadap Hasil Belajar Siswa Pada Materi Penjumlahan Kelas Iv Sdn Tanjung Jati 2. Maktab: Jurnal Pendidikan Dan Teknologi, 3(2), 109–116. Https://Doi.Org/Https://Doi.Org/10.56480/Maktab.V3i2.1169

Sandra, L., & Juniar, D. R. (2021). Ki Hajar Dewantara's Educational Philosophy: Among And Student's Academic Performance. 2nd International Conference On Technology And Educational Science (Ictes 2020), 118–121. Https://Doi.Org/10.2991/Assehr.K.210407.224

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Siagan, M. V, Saragih, S., & Sinaga, B. (2019). Development Of Learning Materials Oriented On Problem-Based Learning Model To Improve Students' Mathematical Problem Solving Ability And Metacognition Ability. International Electronic Journal Of Mathematics Education, 14(2), 331–340.

Simamora, R. E., Saragih, S., & Hasratuddin, H. (2022). Improving Students' Mathematical Problem Solving Ability And Self-Efficacy Through Guided Discovery Learning In Local Culture Context. International Electronic Journal Of Mathematics Education, 14(1), 61–72. Https://Doi.Org/10.12973/Iejme/3966

Sugiarta, I. M., Mardana, I. B. P., Adiarta, A., & Artanayasa, W. (2019). Filsafat Pendidikan Ki Hajar Dewantara (Tokoh Timur). Jurnal Filsafat Indonesia, 2(3), 124. Https://Doi.Org/10.23887/Jfi.V2i3.22187

Sunarya, I., Nurwahidin, M., & Sudjarwo, S. (2022). Pandangan Ki Hajar Dewantara Dalam Mengkonstruksi Pendidikan Indonesia Pada Abad 21. Jurnal Cakrawala Ilmiah, 2(4), 1485–1496. Https://Doi.Org/10.53625/Jcijurnalcakrawalailmiah.V2i4.4336

Sunzuma, G., Zezekwa, N., Mutambara, T. L., Chagwiza, C., & Gwizangwe, I. (2022). Pre-Service Teachers' Whatsapp Preferences In A Mathematics Methodology Course During The Covid-19 Pandemic. Open Education Studies, 4(1), 225–240. Https://Doi.Org/10.1515/Edu-2022-0014

Umbara, U., Rosa, M., & Orey, D. C. (2022). Interpreting The Ethnomathematics Of Pancaniti Building In Indonesia: Feasibility In Revitalize Mathematics Learning Based On Cultural Contexts. Ssrn Electronic Journal. Https://Doi.Org/10.2139/Ssrn.4295828

Yaqin, M. N., Samad, M. H., & Sabaruddin, S. (2024a). The Relevance Of Ki Hajar Dewantara's Educational Philosophy In The National Education Curriculum Policy Based On Merdeka Belajar:(A Study At Muhammadiyah Al Mujahidin Senior High School, Wonosari). Transformational Language, Literature, And Technology Overview In Learning, 3(4), 8–18.

Yaqin, M. N., Samad, M. H., & Sabaruddin, S. (2024b). The Relevance Of Ki Hajar Dewantara's Educational Philosophy In The National Education Curriculum Policy Based On Merdeka Belajar. Transformational Language, Literature, And Technology Overview In Learning (Transtool), 3(4), 8–18. Https://Doi.Org/10.55047/Transtool.V3i4.1329

Zahroh, F. A. (2023). Pemikiran Pendidikan Ki Hajar Dewantara Sebagai Dasar Kurikulum Merdeka. Prosiding National Conference For Ummah, 2(1), 307–312. Https://Conferences.Unusa.Ac.Id/Index.Php/Ncu2020/Article/View/1144

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