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Implementing Numeracy Across-Curriculum : An Adaptation of Australian Approaches in Indonesia's Merdeka Curriculum

Hana Rosita*, Wiryanto, Neni Mariana
Primary Education, Faculty of Education, Universitas Negeri Surabaya, Indonesia.
*Corresponding Author. Email: h4n4rosita@gmail.com

Abstract: This study aims to explore numeracy across-curriculum instruction in Australia that can be adapted to Merdeka Curriculum to serve as learning resources for teachers. Using a systematic literature review method, the research addresses four key questions related to the definition, implementation, educator understanding, and adaptability of cross-curricular numeracy. Literature was selected using strict inclusion criteria, focusing on recent studies discussing numeracy in the context of primary education in Australia and Indonesia. The analysis of eight selected articles reveals two exemplary activities that can be adapted: CUPS and Body Percussion. CUPS (Cross-Curricular Unit on Portion Size) can be implemented in Physical Education (PJOK) Phase B in the topic of Nutritious and Balanced Eating Patterns to instill concepts of numbers and measurement concepts. Body Percussion can be implemented in Arts (SBdP) Phase B on Rhythmic Music Patterns using body percussion to instill number concept.

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Introduction

Numeracy is a skill needed to solve everyday problems. Numeracy refers to the knowledge, skills, behaviours, and dispositions required to meaningfully apply mathematical understanding in diverse real-world contexts (OECD, 2023a). Numeracy can be applied to problems in social, personal, and work contexts. The example of using numeracy for solving personal problem are: (1) determining the appropriate time to sleep to ensure sufficient rest, and (2) calculating the number of steps needed each day to maintain physical health. Another context of numeracy is civic or citizenship numeracy, that the example is comparing the cost of grocery items across the different locations to lead students find disparities in cost of living (Sakurai et al., 2021). Numeracy is more than only solving a contextual math problem at school but it is about using mathematical abilities to improve the quality of life.

Numeracy skill can help students to have a better life since it sharp critical thinking and creativity. According to Andreas Schleicher from OECD (Han et al., 2017), good numeracy skills can address issues such as unemployment, low income, and poor health. Good numeracy skills help individuals think smart and solve problems, making it easier to earn and manage money. Numeracy also builds confidence in handling real-life mathematical situations (Sue & Lee, 2010). Thus, students must master numeracy not only to succeed academically but also to fulfill their roles as family and community members.

As members of both local and global societies, students must be numerate to face modern challenges. Developing a numerate generation is essential to tackling complex global issues, as numerate individuals tend to think critically, logically, and make data-informed decisions. It is widely agreed that numeracy plays a vital role in helping students build logical

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thinking and reasoning skills for use in their daily lives (Getenet, 2023). Such individuals actively contribute to social development and economic and technological progress. Numerate individuals adapt well to change because they process quantitative information effectively (Geiger et al., 2015). So, it can be concluded that developing numeracy is a long-term strategy to build an intelligent, productive, and competitive society.

In Indonesia, numeracy mastery is one of the key indicators in assessing student learning outcome. The government has launched the Minimum Competency Assessment (AKM) to map literacy and numeracy competencies since 2021. Educational reports from the Minimum Competency Assessment (AKM) show that the literacy and numeracy achievement of primary school students is at a moderate level (Nurwahidah et al., 2023). Despite these efforts, assessments and various studies indicate that Indonesian students still perform poorly in numeracy. The 2022 PISA results show Indonesia's math score was 366, down from 379 in 2018, ranking 70th out of 81 countries (OECD, 2023b). This indicates that numeracy learning strategies and their integration into the curriculum in Indonesia are still not effective.

In contrast, Australia has implemented an integrated numeracy approach through "numeracy across the curriculum". This approach promotes numeracy beyond mathematics, integrating it into subjects like science, social studies, arts, languages, religion, and sports. Its goal is to ensure students to develop contextual and cross-disciplinary numeracy skills relevant to 21st-century life. According to PISA 2022, 74% of Australian students reached at least proficiency level 2 in math (compared to the OECD average of 69%), and 12% were top performers (levels 5 or 6) (OECD, 2023a). This success highlights the potential benefits for other countries, such as Indonesia, to adopt similar integrated numeracy approaches to improve students' mathematical outcomes.

Drawing inspiration from countries like Australia, Indonesia could strengthen its numeracy education by embedding it across disciplines, thereby promoting a more contextual and meaningful mathematical understanding. This approach aligns well with the principles of Indonesia's Merdeka Curriculum, which also emphasizes contextual and meaningful learning. While it allows for cross-subject integration, numeracy is often still seen as exclusive to math. This limits students' understanding of numeracy's relevance in real life.

Developing numeracy skills in schools is fundamentally the responsibility of teachers. They must create opportunities for students to apply numeracy across a variety of real-life contexts (Getenet, 2023). However, many teachers face challenges in implementing meaningful numeracy activities beyond classes. More than 57% educators mistakenly equate numeracy with abstract mathematical problems, reflecting a limited and narrow comprehension of the numeracy understanding (Oktariani & Puspaningtyas, 2024). This disconnect between the intended curriculum goals and actual classroom practices underscores the urgent need to explore and adapt successful international approaches, such as Australia's integrated "numeracy across the curriculum" approach, to support meaningful numeracy learning in Indonesia.

While previous research has predominantly examined numeracy in the context of isolated school subjects (Makay et al., 2023; Nasiba, 2022), this study is among the first to investigate its integration across disciplines in alignment with Indonesia's ongoing national curriculum reform. By drawing on Australia's established practices, the research explores how a cross-disciplinary approach to numeracy can enhance students' mathematical thinking and real-world problem-solving skills beyond the boundaries of traditional math classes.

Focus of this study is an in-depth examination of the Australian model of *Numeracy Across the Curriculum*, particularly how it embeds numeracy concepts into various subject

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areas to support holistic student development. The research seeks to determine the feasibility and educational value of adapting this approach to the Indonesian context through the Merdeka Curriculum. To this end, the study also investigates Indonesian teachers' conceptual understanding of numeracy, identifying prevalent misconceptions, instructional challenges, and systemic gaps that may hinder effective implementation. This dual focus—on both the model's pedagogical potential and teacher readiness—is essential for formulating context-appropriate adaptation strategies and ensuring alignment with local classroom realities. Ultimately, the findings of this research are expected to inform future educational policy and the development of contextual learning strategies that foster stronger numeracy competencies among primary education students in Indonesia.

Research Method

This study uses a qualitative approach with Systematic Literature Review (SLR) method modified steps (Kitchenham, 2007). The SLR method was chosen for its ability to systematically identify, evaluate, and interpret relevant research related to numeracy across the curriculum (Hanifah et al., 2025). It allows researchers to comprehensively map existing literature and highlight key themes and gaps. Through this approach, the study aims to draw valid and structured conclusions that support theoretical insights and practical recommendations.

The first step is identifying the research questions. At this stage, the researchers formulated the main questions to be answered through the literature review, which include:

1) What is the concept of numeracy across the curriculum in Australian education system?.
2) What are examples of implementation and the effectiveness of numeracy across the curriculum applied in Australia education?.
3) How do educators in Indonesia understand and implement numeracy across the curriculum?.
4) What is the relevance and potential for adapting Australia's numeracy across the curriculum in Merdeka Curriculum?.

The second step is determining inclusion and exclusion criteria. Researchers determined that the articles to be analysed must meet several criteria, they are: (1) published within the last ten years, (2) discuss the topic of numeracy in the context of basic education (elementary and junior high school) in Australia and Indonesia, (3) related to numeracy across the curriculum teaching practices, (4) Available in full version. The strict selection of articles also reduces the potential for bias that might arise from using older literature, which may not reflect current trends or policies in the field of education. Furthermore, by incorporating research from various countries, including Australia and Indonesia, this study offers broader insights into the best ways to adopt a numeracy acroos the curriculum approach in both countries. Articles that are not directly relevant or inaccessible in full will be excluded from the review.

The third step is literature search. Researchers conducted literature searches through academic databases such as Google Scholar and Scopus to find articles related to numeracy across the curriculum. Keywords used include: "numeracy", "numeracy across the curriculum", "numeracy in Australian education", "numeracy cross the curriculum idea", "numeracy and science", "numeracy and music", and other relevant keyword combinations. Eight final articles were selected that matched the topic. With this approach, the researcher can ensure that the literature found is the most relevant to the research topic and of high quality.

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The fourth step is data extraction and synthesis. At this stage, researchers identified and grouped key information from each study based on the question at the first step, they are: (1) definition of numeracy, (2) models of numeracy across the curriculum implementation, (3) teaching strategies, (4) Findings related to learning effectiveness. Thematic synthesis was conducted to highlight similarities and differences among studies and to draw preliminary conclusions about best practices that can be adapted.

The fifth step is reporting the results. The synthesis results are presented in the form of an in-depth descriptive narrative, supported by tables and quotes from the main sources if necessary. The analysis not only describes numeracy practices in Australia but also compares them with the educational context in Indonesia and evaluates opportunities to adapt Australian numeracy across the curriculum into the Merdeka Curriculum.

Results and Discussion

Numeracy Across The Curriculum Concept in Australian Education System

Numeracy across the curriculum concept in this study refers to numeracy across the curriculum concept as applied in Australian education system. Below is a list of studies discussing Numeracy across the curriculum concept in Australian education.

Tabel 1. Numeracy Across *The Curriculum Concept*

No	Author	Title of Study	Year
1	Merrilyn Goos, O'Sullivan	Numeracy Across Curriculum	2022
2	Sakurai, Justin, & Goos, Merrilyn	Revisiting tools in numeracy learning: the role of authentic digital tools	2023

Goos and Sullivan in their study, stated that it is necessary to implement numeracy across the curriculum to improve students' numeracy skills (Goos & O'Sullivan, 2022). Teachers can apply numeracy across the curriculum if they are provided with a numeracy framework and models aligned with the official school curriculum, along with practical guidance for implementation in the classroom across various education levels and subject areas (Goos & O'Sullivan, 2022). There are two strategies to achieve the learning goals of numeracy across the curriculum: (1) integrating mathematics with other subjects in accordance with the applicable curriculum, or (2) identifying the intrinsic numeracy demands and opportunities within non-mathematics subjects. Integrating mathematics into other subjects does not mean that teachers must become mathematics experts; rather, it means teachers help students recognize the use of numeracy that can support the learning objectives of the subject being taught.

The study of Sakurai and Goos also emphasizes that the numeracy model proposed by Goos et al (Goos et al., 2012) remains highly relevant for today's educational needs (Sakurai & Goos, 2023). However, one aspect that requires further development is the conceptualization of "tools" within the model. As educational contexts increasingly involve digital technology, it is important to expand the definition of tools to include modern digital applications.

The Effectiveness of Implementing Numeracy Across The Curriculum in Australian Education

The effectiveness of implementing Numeracy Across The Curriculum in Australian primary and secondary schools is shown in the following studies.

Tabel 2. The Effectiveness of Implementing Numeracy Across The Curriculum

No	Researchers and Year	Title of Study
1	Follong, Berit M, Elena Prieto-	Integrating nutrition into the mathematics

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	Rodriguez, Andrew Miller, Clare E. Collins, and Tamara Bucher (2020)	curriculum in Australian primary schools: protocol for a randomized controlled trial
2	Shirin Shakeri, Karen P McDaid, Judith Fethney (2021)	Food Numeracy: Definition and Application Across the Australian Secondary School Curriculum
3	Jane Law (2018)	Music and Numeracy

According to the study of Follong et al, integrating nutrition content—specifically portion sizes—with mathematics can improve knowledge and skills in estimating food portion sizes among elementary school students (Follong et al., 2020). It means CUPS activity can develop numeracy skill. Understanding food portion sizes is important from an early age because it helps build healthy habits, such as enabling individuals to control their calorie intake and avoid health problems related to food, such as obesity (Carruba et al., 2023). It is also explained that, indirectly, learning that integrates nutrition topics on portion sizes with mathematics increases student engagement in using mathematics, which in turn positively impacts learning outcomes in number and measurement topics.

Research by Shakeri et al further emphasizes the effectiveness of numeracy across the curriculum in raising awareness about healthy eating, improving math learning outcomes, and enhancing analytical thinking skills. The findings indicate a significant relationship between high numeracy skills and individual health status related to food (Shakeri et al., 2021). Cross-curricular food numeracy is expected to help students recognize and connect the important role of mathematics and mathematical reasoning skills in solving everyday problems related to food—such as understanding nutrition information labels and budgeting for food (Shakeri et al., 2021). In addition, it can help students use mathematical data and communicate mathematical reasoning to address global issues related to health, economy, and environment. For example, contributing to reducing climate change by shifting to more plant-based eating patterns to lower carbon emissions (Shakeri et al., 2021).

In addition to its implementation in science lessons related to health, numeracy across the curriculum can also be applied in music education. Research by Law shows that numeracy competencies are found in music learning (Law, 2018). Furthermore, lessons that integrate mathematics and music can be progressively developed to engage symbolic representation and mathematical competencies in number, space, patterns, and algebra. Law describes an example of a numeracy across the curriculum activity conducted in elementary schools, where students relate multiplication to rhythmic patterns and use stamps to indicate multiplication processes (Law, 2018). Body percussion is used as a tool to express the concept of multiplication. Body percussion includes clapping, clicking, thigh slapping (called "patchen"), and stomping. Moreover, integrating music into math learning can foster students' positive perception of mathematics and enhance creative thinking, expression, imagination, and risk-taking abilities (Law, 2018).

Educators' Understanding and Implementation of Numeracy Across The Curriculum in Indonesia Basic Education

The following research reveals how Indonesian teachers perceive and implement numeracy across the curriculum:

Tabel 3. Educator's Understanding and Implementation of Numeracy Across The Curriculum in Indonesia Basic Education

No	Researchers and Year	Title of Study
1	Isti Khomaria & Al Jupri (2024)	Teachers' Perception of Numeracy in Mathematics Learning in the Merdeka Curriculum

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2	Romlah Tresna Dewi, R. Rusman (2025)	Exploring cross-curriculum numeracy understanding and implementation in Santa Angela teachers
3	Awi Dassa, Said Fachry Assagaf, Syahrullah Asyari (2023)	Integration of Numeracy in Non-Mathematics Subjects
4	Lilis Nurul Khakima, Siti Fatimah Az Zahra, Leni Marlina, & Zuhair Abdullah (2021)	Implementation of Numeracy Literacy in Elementary School Student Learning.

The research conducted by Khomaria and Jupri on grade 1–6 elementary school teachers in Kebumen Regency shows that teachers are aware of the importance of developing numeracy skills from an early age (Khomaria & Jupri, 2024). However, teachers have misconceptions about how to develop students' numeracy skills, often attempting to do so through numeracy drills that are separate from mathematics instruction. Teachers are unaware that improving numeracy skills should be achieved by enhancing the quality of mathematics teaching.

On the other hand, some elementary school teachers in Indonesia already have a good understanding of numeracy across the curriculum. The understanding of Indonesian teachers regarding the implementation of numeracy across the curriculum at the elementary level can be seen in the study by Khakima et al. (2021). Examples of numeracy across the curriculum activities that have been implemented in elementary schools include beading and paper folding in Arts and Culture subjects (SBdP), measuring pulse before and after activities and comparing the results in Physical Education (PJOK), planting in Science (IPA), collecting data on local diversity in Social Studies (IPS), and recording the diversity of religion, culture, and physical characteristics in Civic Education (PPKn) (Khakima et al., 2021).

At the junior high school level, the implementation of numeracy across the curriculum is reflected in the study by Dassa et al (Dassa et al., 2023). Dassa's research provides examples of numeracy-integrated activities in other subjects designed by 23 non-mathematics junior high school teachers in Takalar Regency, South Sulawesi. These activities include identifying which texts contain more language features in Indonesian language classes, measuring scale or the amount of materials used in creating artworks with mixed media techniques in art classes, measuring tables using rulers in science classes, and calculating the average temperature of highland and coastal areas in social studies (Dassa et al., 2023).

Although numeracy across the curriculum has been implemented by some teachers at both elementary and junior high school levels, many teachers in Indonesia still face significant challenges in its application. Research by Dewi and Rusman shows that most teachers have a good understanding of numeracy and have made attempts to integrate it into their teaching, but the frequency of implementation remains low (Dewi & Rusman, 2025). The main challenges that lead to the low application of numeracy across the curriculum include a lack of training, limited resources, and insufficient time for lesson planning (Dewi & Rusman, 2025).

To address these challenges, it is necessary to adopt and adapt learning activities based on numeracy across the curriculum approach, particularly those that have been successfully implemented for years likes Australia, where the integration of numeracy into various subjects has shown significant results in improving students' skills. Adapting such proven practices can provide more accurate and practical guidance for Indonesian teachers,

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especially those who may still misinterpret or struggle with the concept, while also making implementation more manageable, given the availability of tested and effective models.

Potential Adaptation of Australia's Numeracy Across The Curriculum Instruction in Merdeka Curriculum

To adapt numeracy across the curriculum learning activities from Australia into education in Indonesia, it is necessary to analyze the alignment between the Australian numeracy across the curriculum activities and the *Merdeka Curriculum*. The analysis focuses on the learning outcomes for Basic Education (Elementary and Junior High School) in the *Merdeka Curriculum* that align with the numeracy across the curriculum activities examined in this study. The learning outcome data were obtained from the Decree of the Head of the Agency for Educational Standards, Curriculum, and Assessment, Ministry of Education, Culture, Research, and Technology Number 008/H/KR/2022 concerning Learning Outcomes for Early Childhood Education, Basic Education, and Secondary Education in the *Merdeka Curriculum* (BSKAP, 2022).

Tabel 4 Potential Adaptation of Australia's Numeracy Across The Curriculum Instruction in Merdeka Curriculum

No	Australia's Numeracy Activity	Merdeka Curriculum			
		Phase	Subject	Learning Outcome	Topic
1	CUPS (Cross-Curricular Unit on Portion Size)	Phase B	PE (PJOK)	By the end of this phase, students can demonstrate the ability to apply a healthy lifestyle (including physical activity, rest, leisure time, and choosing nutritious and balanced food).	Healthy Lifestyle (Nutritious and Balanced Food)
2	Body Percussion	Phase B	Music	Students create simple musical sounds into new patterns using intrinsic and extrinsic musical sound elements through rhythmic music patterns.	Rhythmic Music Patterns using Body Percussion

Discussion

Numeracy across the curriculum is a learning approach aimed at enhancing students' numeracy skills. Goos explains that the implementation of numeracy across the curriculum will be easier for educators to carry out by following a numeracy model guide (Goos & O'Sullivan, 2022). The model remains relevant for numeracy education today (Sakurai & Goos, 2023). Goos developed a 21st-century numeracy model that emphasizes critical orientation. Critical orientation encourages students to evaluate and interpret information reflectively when making decisions. In today's complex and fast-changing world, cultivating such critical thinking skills is increasingly important, as it equips students to face challenges (Mariana et al., 2023). This critical orientation is built by integrating mathematical knowledge, tools/media, and dispositions/character in addressing problems in various life contexts, including personal, social, work, and citizenship contexts.

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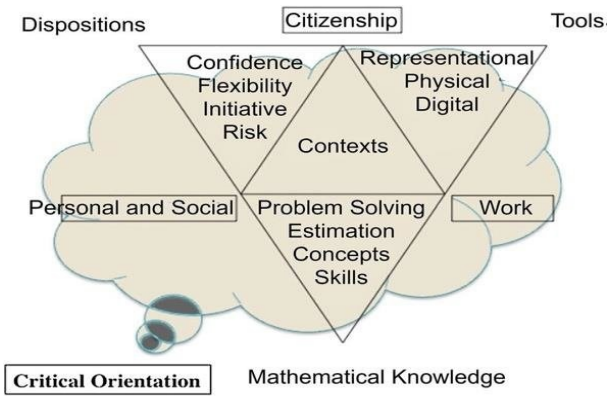

Figure 1. 21st Century Numeracy Model (Goos et al., 2012)

Students who can use critical orientation to make decisions in daily life can become numerate individuals. The Tasmania Department of Education explains that being numerate means having and being able to use knowledge, skills, intuition, and mathematical experience appropriately whenever needed in daily life (Stoessiger, 2002). Critical thinking is a general term used to describe the sharpening of cognitive skills so that students are able to analyze, identify, and evaluate opinions, as well as draw reasonable and intelligent conclusions and decisions (Wiryanto et al., 2021). By fostering critical thinking, learners are not just equipped to improve how they perform tasks, but more importantly, to approach and carry out those tasks in new and innovative ways (Alsulami, 2024). Thus, numeracy across the curriculum learning does not solely focus on the theoretical development of mathematical abilities but also on the development of applicable mathematical skills, enabling students to be more confident and courageous in using mathematical knowledge as a basis for making decisions and taking actions in everyday life.

Numeracy across the curriculum can be implemented using two strategies: (1) integrating mathematics with other subjects in accordance with the applicable curriculum or (2) identifying the intrinsic numeracy demands and opportunities in subjects other than mathematics (Goos & O'Sullivan, 2022). By using these strategies, educators in Australia have designed various numeracy across the curriculum-based learning activities. Some of these include: (1) CUPS (Cross-Unit Portion Size) to raise awareness of healthy and balanced eating patterns in elementary schools (Follong et al., 2020); (2) Food Numeracy to address health, economic, and environmental issues in middle schools (Shakeri et al., 2021); and (3) Body Percussion to develop rhythmic musical creativity in elementary schools (Law, 2018). These numeracy across the curriculum learning activities align with the 21st-century numeracy model and have proven to enhance numeracy skills, mathematical knowledge, and knowledge in other subjects such as science, social studies, and the arts.

Educators in Indonesia have also recognized the importance of developing numeracy skills, but not all educators understand the correct ways to develop these skills. Some educators at the elementary level only conduct numeracy drills to improve numeracy skills (Khomaria & Jupri, 2024). However, drills only develop mathematical knowledge and skills, not numeracy skills. In fact, many educators at the elementary school level have understood and are able to implement numeracy across the curriculum learning according to the 21st-century numeracy model. The understanding of teacher in implementing numeracy across the curriculum can be seen in the elementary school level (Khakima et al., 2021), and in the middle schools non-mathematics lesson (Dassa et al., 2023). Unfortunately, some activities that have been developed do not yet reach the critical orientation that is applicable in daily

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life and form numerate individuals. Activities like counting language elements in a text, measuring the length of a table, measuring temperature in coastal and highland areas, counting pulse rates, and documenting the diversity of religion and culture still did not reflect the use of mathematics for decision-making or action in solving problems in daily life. More in-depth discussions are needed to use this mathematical information, as seen in activities like CUPS, Food Numeracy, and Body Percussion.

Educators in Indonesia still require extensive training in applying numeracy across the curriculum. The frequency of implementing numeracy across the curriculum in Indonesia is still low due to many challenges faced by educators, such as a lack of training, limited resources, and insufficient time for lesson planning. Therefore, it is essential to support teachers through professional development opportunities by providing high-quality learning resources in order to enhance student learning experiences (Hasri & Saputra, 2025). To address and enrich educators' understanding of appropriate examples of implementing numeracy across the curriculum in primary education, this study analyses the potential adaptation of numeracy across the curriculum learning activities from Australia into Merdeka Curriculum. The implementation of numeracy across the curriculum in this study is in line with the 21st-century numeracy model and is capable of developing students' critical orientation skills using mathematical knowledge (forming numerate individuals). The analysis results show that the CUPS and Body Percussion activities can be implemented in Merdeka Curriculum because they align with the learning outcomes for Phase B, specifically for grades 3 and 4 in Primary School, in the Physical Education and Health (PJOK) and Music Arts subjects. The CUPS activity aligns with the content on healthy and balanced eating patterns, while Body Percussion aligns with the content on rhythmic musical patterns. The CUPS activity can encourage the concept of numbers and measurement, while Body Percussion can encourage the concept of numbers.

The example of CUPS activity that contains numeracy, is when students use fraction concept in understanding a balanced food portion size, such as 1/3 of plate for staple food, 1/3 of plate for vegetables, 1/6 for dish, 1/6 for fruits. By applying a fraction concept in the daily food, student will have a healthy lifestyle. While the examples of Body Percution activity that contains numeracy, is when student use number pattern and multiplication to sing a song, such as in singing “twinkle – twinkle little star”, students can use a pattern of 2 times open hands hit on the table, 2 times close fits hit on the table, 2 times open hands hit on the table, and 1 times clap. By applying number pattern and multiplication in singing, student will produce a beautiful singing performance.

Conclusion

Numeracy across the curriculum learning activities from Australia can be adapted to Merdeka Curriculum, especially in primary education. These activities include CUPS (Cross-Unit Portion Size) and Body Percussion. Both learning activities can be adapted because they align with the learning outcomes for Phase B in the Physical Education and Health (PJOK) and Music Arts subjects in Merdeka Curriculum. By adapting numeracy across the curriculum learning activities that are already in line with the 21st-century numeracy model, it is hoped that educators can correct any misunderstandings regarding implementation and find it easier to implement numeracy across the curriculum in Indonesia. Furthermore, the proper implementation of numeracy across the curriculum by educators is expected to positively impact the improvement of students' numeracy skills.

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Recommendation

For the future research, it is recommended to develop teaching modules and implement the CUPS and Body Percussion activities in primary schools to evaluate the effectiveness of numeracy across the curriculum approaches in enhancing students' numeracy skills. Alongside module development, there should also be a focus on designing and refining engaging and contextually relevant numeracy teaching strategies that align with the 21st-century numeracy model. These strategies should integrate mathematical concepts into real-life contexts across various subjects, empowering students to build critical thinking and informed decision-making skills.

However, several barriers may hinder the successful implementation of numeracy across the curriculum, including limited teacher training, lack of teaching resources, time constraints in lesson planning, and a general unfamiliarity with interdisciplinary approaches. To tackle these challenges, it is essential for Indonesia government to provide continuous professional development programs focused on numeracy integration, develop practical and adaptable teaching resources, and offer collaborative planning opportunities for teachers. Involving school leaders in supporting numeracy across the curriculum innovation and encouraging peer learning communities can also help create a more supportive environment for implementation. Through such efforts, educators will be better equipped to apply effective, integrated numeracy instruction in basic education, ultimately strengthening students' numeracy competencies across subjects.

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