Indonesian Journal of Educational Development (IJED)
Volume 6, Issue 1, 2025, pp. 109-123
ISSN: 2722-1059 (Online); ISSN: 2722-3671 (Print)
DOI: https://doi.org/10.59672/ijed.v6i1.4640

Challenges in online mathematics education for elementary schools: A teacher's perspective from Indonesia

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Article Info

Article history:
Received April 11, 2025
Revised April 25, 2025
Accepted May 3, 2025
Available online May 21, 2025

Keywords: Digital Applications, Educational Strategies, Elementary Schools, Online Mathematics Education, Student Engagement

Abstract. This study investigatesd the challenges of online mathematics education in Indonesian elementary schools during the COVID-19 pandemic, which exposed critical limitations in digital learning delivery. The research aimed to identify the most difficult mathematical topics to teach online, explore the effectiveness of digital tools used by teachers, and provide strategic recommendations. Using a cross-sectional survey method, the study involved elementary school teachers from various regions in Indonesia. Data were collected via a structured questionnaire containing both closed- and open-ended items, then analysed using descriptive statistics and thematic analysis. The findings showed that mathematics was the most challenging subject to teach online due to difficulties in demonstrating abstract concepts like geometry, fractions, and 3D figures. Teachers also faced obstacles in student engagement, timely feedback, and access to interactive teaching media. Video conferencing tools were most frequently used, followed by learning management systems and messaging apps. The study concluded that online mathematics learning required substantial improvement in terms of instructional design and teacher support. It was recommended that policymakers and schools invest in developing interactive, media-rich learning resources and provide training programs to enhance teacher readiness for future online or blended learning environments.

Introduction

Mathematics education at the elementary level is a decisive step in building a profound understanding of mathematical concepts. The importance of a strong foundation in mathematics extends beyond academic success for children (Schaeffer et al., 2021; Yifan et al., 2022). It is also crucial in developing critical thinking and problem-solving skills that they will utilise throughout their lives. Introducing basic concepts such as addition, subtraction, multiplication, and division, as well as an understanding of shapes and sizes, should be done in an engaging and interactive manner to spark curiosity and a love for mathematics from an early age (Alim et al., 2021).

Changes in Mathematics education technology and the internet have revolutionised many aspects of our lives, including how we learn and teach mathematics (Borba, 2021; Drijvers & Sinclair, 2024; Engelbrecht & Borba, 2024). With technological advancements, teachers now have new tools to make lessons more captivating and interactive. Online learning environments allow students to learn at their own pace, often with the help of videos, apps, and games designed to reinforce mathematical concepts (Hongsuchon et al., 2022; Kahn et al., 2017; Tezer et al., 2019; Wong et al.,

2019). However, this also poses challenges in ensuring that students remain engaged and receive adequate feedback for their development.

The impacts of the COVID-19 Pandemic forced education to adapt at an unprecedented rate. Schools had to switch to remote learning models almost overnight, posing significant challenges for teachers, students, and parents. Home-based learning requires access to reliable technology and the internet, which is not always available to all students, thereby exacerbating educational disparities(Amelia et al., 2020; Goudarzi et al., 2023; Torrington et al., 2023). Additionally, teachers had to find ways to maintain social interaction and collaboration among students in a virtual environment.

The importance of evaluating online mathematics learning offers flexibility and accessibility. It is crucial to evaluate its effectiveness, especially in the context of elementary school mathematics education (Taha et al., 2020; Turmuzi & Lu'luilmaknun, 2023; Weigand et al., 2024). Arias et al. (2018); Ariyanti & Santoso (2020); Faidley (2018) suggest that online mathematics learning outcomes may not be as effective as face-to-face learning, with students showing a more positive response to mathematics before transitioning to online learning. This highlights the need for well-designed learning strategies that can leverage technology without sacrificing educational quality.

This research aims to identify specific challenges faced in online mathematics learning at the elementary level and determine which mathematical topics are most difficult to teach virtually. Understanding these obstacles will enable educators to design more effective strategies and learning resources that align with students' needs in digital environments. Although face-to-face learning has resumed, this study remains relevant as it informs preparedness for future disruptions. This study lies in its detailed mapping of difficult mathematical topics across grade levels and its evaluation of the effectiveness of digital tools used by teachers. Based on these considerations, the research seeks to answer the following questions: What challenges do teachers encounter in teaching mathematics online, which topics are most difficult, and what tools have proven effective in addressing these challenges?

Method

Research Design and Respondents

This study employed a mixed-method approach, combining quantitative descriptive research and qualitative analysis. The primary method used was a survey approach with a cross-sectional design, supported by qualitative insights from open-ended responses. The research aimed to identify the most challenging mathematical topics to teach online and evaluate the effectiveness of digital tools used by elementary school teachers in Indonesia during the COVID-19 pandemic. The research process included five key stages: development of research instruments, expert validation, sampling and data collection, data processing and analysis, and finally, interpretation of results and formulation of conclusions.

The population in this study consisted of elementary school teachers across Indonesia who had experience teaching mathematics through online platforms. To ensure a diverse representation of geographical backgrounds, stratified random sampling was employed. The sample was distributed across five major islands: Java, Sumatra, Kalimantan, Sulawesi, and Papua. This approach was intended to capture variations in digital infrastructure, teaching experiences, and regional readiness for online education.

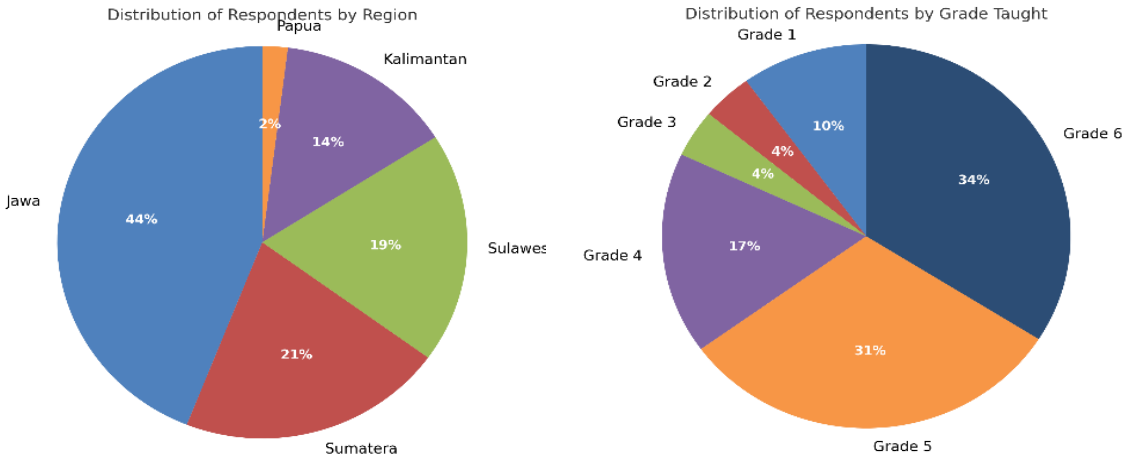

Image 1. Distribution of Elementary School Teacher Respondents

Research Instrument

A structured questionnaire was used as the main research instrument, designed based on relevant literature and expert consultations. The questionnaire consisted of 25 closed-ended questions using Likert scales and multiple-choice formats, along with 5 open-ended questions to allow teachers to elaborate on their experiences and challenges.

Data Analysis

Data analysis followed two complementary approaches. Quantitative data were with descriptive statistics applied to identify frequencies, percentages, and cross-tabulations. These analyses were used to determine the most difficult topics to teach at each grade level and the digital tools teachers found most effective. Results were presented using tables and bar charts for clarity and comparability.

For the qualitative data, responses from the open-ended questions were analysed using thematic analysis. This involved a coding process to identify common patterns and themes related to teaching challenges, student engagement, and technology-related barriers in online mathematics instruction. The analytical process involved several stages including data collection, validation, coding, and both quantitative and qualitative analysis.

Results and Discussion

Challenges in Teaching Mathematics Online

The data collected from elementary school teachers revealed that mathematics was the most challenging subject to teach online. Each grade level presented unique difficulties with certain topics. The following image 1 illustrates the percentage of teachers who reported significant difficulty in delivering mathematics instruction online across different grade levels. According to 92% of elementary school teacher respondents, the subject that posed the greatest difficulty in online teaching was mathematics.

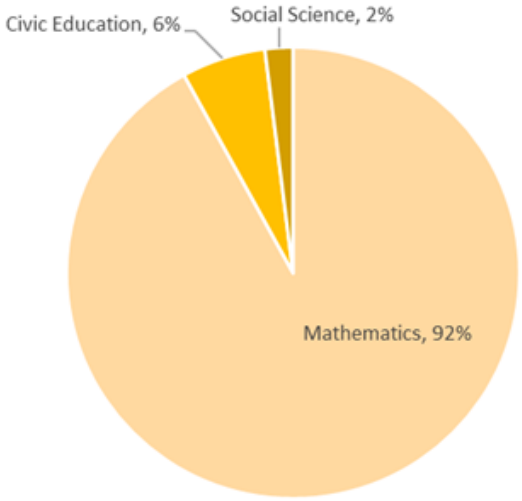

Image 2. The Most Challenging Subjects to be Taught Online

Teaching mathematics online presents unique challenges that differ from traditional classrooms. One major limitation is the reduced use of concrete examples and visual aids, which are essential in helping students understand abstract concepts like geometry and algebra. Without physical manipulatives and hands-on activities, learning becomes less tangible. Student interaction and engagement also decline in virtual settings. The lack of real-time communication hinders immediate feedback and dynamic class discussions, making it harder for teachers to assess comprehension. Teachers often rely on nonverbal cues, which are absent online, to determine if students truly understand.

Practice and exercises are critical for mathematics mastery, but online platforms may not offer diverse, interactive problem sets. Additionally, digital tools don't always replicate the tactile learning experience provided by physical objects. Personalised guidance becomes more difficult when students struggle, especially during complex problem-solving. Teachers must adopt creative strategies to offer support remotely. Lastly, assessment methods must be adapted to ensure fairness and accuracy. Traditional tests may not reflect actual understanding in an online context. Delivering clear and effective explanations also becomes more demanding, as abstract concepts require innovative visualizations and simplified digital communication.

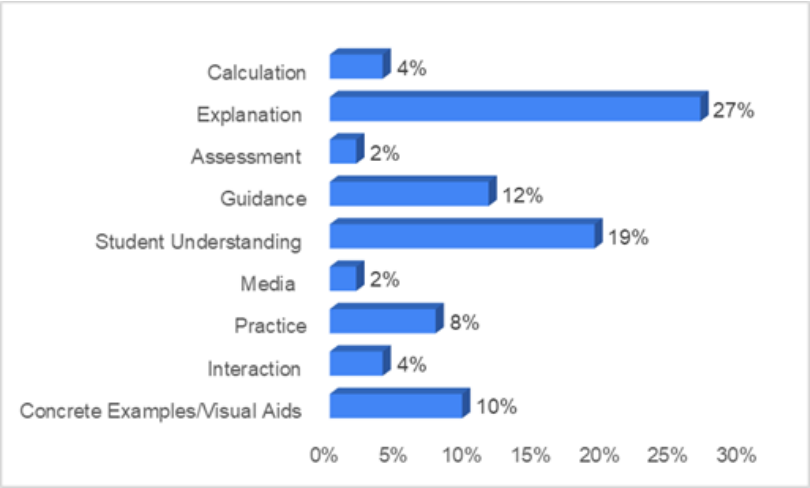

Image 3. The Reasons Mathematics is Difficult to be Taught Online

A recent survey found that 71% of elementary school teachers consider video conferencing tools (e.g., Zoom, Google Meet, Microsoft Teams) highly effective for teaching mathematics online. These platforms allow real-time interaction, enabling teachers to explain concepts, answer questions, and provide immediate feedback. They are widely accessible and user-friendly, minimising technical barriers for students and teachers. Features like screen sharing, virtual whiteboards, and multimedia presentations support visual learning and live demonstrations. Video conferencing also enables personalised guidance through individual or small-group sessions and allows students to practice and receive feedback during lessons.

Meanwhile, 12% of teachers prefer using Learning Management Systems (LMS) such as Google Classroom, Edmodo, or Moodle. LMS platforms support interaction through assignment submissions, announcements, and discussion forums. They offer a centralised structure for organising content, tracking progress, and managing tasks. LMS also enables asynchronous learning, allowing students to study at their own pace, revisit materials, and become more independent learners. Many educators enhance this experience by integrating LMS with video conferencing tools.

Chat applications like WhatsApp, Telegram, and Line are used by 11% of teachers. Their popularity stems from widespread familiarity, ease of use, and accessibility on mobile devices. Teachers use these apps to share materials, answer questions, and maintain regular communication with students and parents. Though only used by 2% of teachers, GeoGebra is praised for its capabilities in visualising abstract mathematical concepts. This platform integrates geometry, algebra, and calculus tools, allowing students to interactively explore math relationships.

Likewise, 2% of teachers utilize Jamboard, a collaborative digital whiteboard. While details are limited, Jamboard supports interactive problem-solving and visual explanations, making it suitable for real-time collaboration during online lessons. These findings highlight how various digital tools address different teaching needs and student learning preferences in online mathematics education.

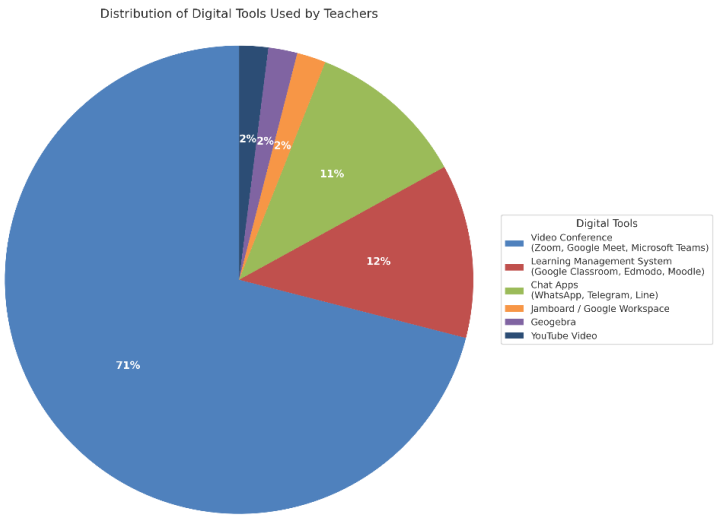

Image 4. Most Effective Applications for Teaching Mathematics Online

Mathematics Topics Difficult to Teach Online

Grade 1

Teaching mathematics online presents unique challenges, especially for abstract or hands-on topics. 40% of Grade 1 teachers report that weight is a difficult concept to teach virtually. Understanding weight requires physical interaction with objects and measuring tools like scales. Without tangible

experiences, students struggle to visualise and compare weights. Videos or images alone often fail to convey the full concept, making comprehension difficult.

An equal percentage of teachers also find it challenging to teach two-digit numbers and place value online. This concept relies heavily on visual and tactile aids, such as base-ten blocks, to demonstrate the difference between tens and ones. In face-to-face settings, manipulatives help students recognise that a digit's position determines its value. Online, replicating this visual clarity is difficult, which can hinder student understanding.

Meanwhile, 20% of teachers identify elapsed time as another problematic topic. Elapsed time involves determining the duration between two times, which can confuse young learners who are still developing their understanding of time. Differentiating between clock readings and the actual passage of time requires guided practice and consistent feedback—elements that are harder to provide in online formats.

These challenges highlight the need for innovative, interactive digital tools in early math education.

Table 1. Mathematics Topics that are Difficult to Learn Online in Grade 1

No.	Subject Matter	Percentage
1.	Weight	40%
2.	Numbers Up to Two Digits	40%
3.	Elapsed Time	20%

Grade 2

Half of the grade 2 teachers believe that teaching multiplication online is challenging. This is because multiplication requires a special understanding, and specific media (such as visual aids or interactive tools) are necessary to facilitate comprehension. The other half of the teachers find teaching weight challenging. Students need direct practice in measuring weight. This practical experience should be accompanied by guidance from teachers.

Table 2. Mathematics Topics that are Difficult to Learn Online in Grade 2

No.	Subject Matter	Percentage
1.	Weight	50%
2.	Multiplication	50%

Grade 3

Half of the grade 3 teachers find teaching fractions challenging, especially in an online setting. They believe that fractions require both media (visual aids, manipulatives, etc.) and practice for students to understand effectively. The other half of grade 3 teachers consider teaching the standard unit of time challenging. This topic requires students to reason and read appropriate units of time.

Table 3. Mathematics Topics that are Difficult to Learn Online in Grade 3

No.	Subject Matter	Percentage
1.	Fractions	50%
2.	Standard Unit of Time	50%

Grade 4

According to 37% of grade 4 teachers, teaching the concept of GCF and LCM is particularly challenging in an online setting. These topics require detailed interaction between teachers and students. Teachers need to explain the concepts thoroughly, address doubts, and provide personalized guidance. 27% of grade 4 teachers find teaching fraction forms challenging. Students

need direct practical application to understand fractions effectively. 18% of grade 4 teachers find teaching angle measurement challenging. 9% of grade 4 teachers find teaching bar graphs difficult. Teachers need to demonstrate how to create and interpret bar graphs. Students should understand the axes, labels, and data representation. Another 9% of grade 4 teachers find understanding the relationship between lines challenging. Without direct visual representation, students may develop misconceptions. Teachers can use drawings, diagrams, and interactive tools to explain concepts like parallel lines, perpendicular lines, and intersecting lines.

Table 4. Mathematics Topics that are Difficult to Learn Online in Grade 4

No.	Subject Matter	Percentage
1.	GCF and LCM	37%
2.	fraction forms	27%
3.	measurement of angles in plane	18%
4.	bar graph	9%
5.	relationship between lines	9%

Grade 5

According to 30% of Grade 5 teachers, teaching scale using floor plans is the most difficult topic online. This is due to the complexity of comparing scales, students' difficulty in interpreting floor plans, and the need for repeated, hands-on practice using realistic media.

Another 22% report that multiplication and division of fractions and decimals are especially challenging. These concepts require step-by-step guidance, repeated practice, and clear explanations. Students often struggle to grasp fractional operations independently, making real-time teacher support essential.

19% of respondents cite difficulties in teaching simple three-dimensional (3D) nets, which ideally require physical models and interactive manipulation. Without hands-on tools, students find it harder to visualize how 2D shapes fold into 3D forms.

Teaching the volume of 3D shapes is considered challenging by 11% of teachers, mainly due to students' difficulty in understanding and memorizing abstract formulas. Each 7% of teachers find cube–cube root relationships and addition–subtraction of fractions challenging due to their abstract nature and the need for diverse examples.

Finally, 4% of teachers identify data collection and interpretation as difficult to teach online, as it requires contextual, real-life exploration that is hard to replicate virtually.

Table 5. Mathematics Topics that are Difficult to Learn Online in Grade 5

No.	Subject Matter	Percentage
1.	Scale through floor plans	30%
2.	Multiplication and division of fractions and decimals	22%
3.	Simple three-dimensional nets	19%
4.	Volume of three-dimensional shapes	11%
5.	Relationship between cube and cube root	7%
6.	Addition and subtraction of two fractions	7%
7.	Data and collection	4%

Grade 6

According to 48% of Grade 6 teachers, teaching the combination of several three-dimensional shapes is the most challenging in online settings. The topic requires precise calculations, complex visualizations, and hands-on demonstrations, which are difficult to replicate virtually. Limited

access to media and teaching aids further hinders student understanding, and direct interaction is essential for effective instruction.

Another 27% of respondents find topics related to circles—such as center point, radius, diameter, arc, chord, sector, and segment—difficult to teach online. Teachers struggle to illustrate these concepts without drawing tools or concrete aids, and students often find the related formulas and calculations confusing.

Additionally, 7% of teachers identify negative integers and volumes of prisms, cylinders, cones, and spheres as difficult topics. Negative integers require abstract thinking and imagination, while understanding 3D volume involves formula application and hands-on practice.

5% report that operations with negative integers (addition, subtraction, multiplication, and division) are challenging due to confusion in applying order of operations and solving story problems. 4% find mixed operations difficult to teach, as students often struggle with number equivalence. The remaining 2% believe mode, median, and mean are difficult for students to grasp in an online environment.

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Table 6. Mathematics Topics that are Difficult to Learn Online in Grade 6

No.	Subject Matter	Percentage
1.	Combination of several three-dimensional shapes	48%
2.	Center point, radius, diameter, arc, chord, sector, and segment	27%
3.	Negative integers	7%
4.	Volumes of prisms, cylinders, cones, and spheres	7%
5.	Operations of addition, subtraction, multiplication, and division of negative integers	5%
6.	Mixed operations	4%
7.	Mode, median, and mean	2%

Teaching mathematics online presents significant challenges for many educators. Research indicates that teachers often struggle to effectively deliver mathematics instruction through online platforms (Ruef et al., 2022; Widana et al., 2024). One study highlights that teachers face difficulties in receiving feedback from students and experience limited student interaction, making it hard to assess students' understanding during lessons (Hodge-Zickerman et al., 2021). Additionally, many online learning platforms have limitations and obstacles that hinder students' ability to overcome challenges, resulting in the use of platforms that do not significantly enhance learning outcomes (Amedu & Hollebrands, 2022; Casinillo et al., 2022; Sukma & Priatna, 2021). For instance, the lack of real-time interaction and the inability to use hands-on teaching methods are significant barriers (Amedu & Hollebrands, 2022).

Moreover, the majority of students report low satisfaction with online mathematics learning, suggesting that this method has not been fully effective in supporting their education (Alqiam, 2021; Amedu & Hollebrands, 2022). Teachers also express concerns about students struggling to engage effectively and access online education (Amedu & Hollebrands, 2022). The COVID-19 pandemic has exacerbated these issues, as many educators were unprepared for the sudden shift to online teaching (Amedu & Hollebrands, 2022). Studies have shown that while some students may prefer online learning for its flexibility, the overall effectiveness, especially in subjects like mathematics, remains questionable (Li & Schoenfeld, 2019). This highlights the need for improved online teaching strategies and better-designed educational technologies to enhance learning outcomes (Amedu & Hollebrands, 2022; Hodge-Zickerman et al., 2021; Li & Schoenfeld, 2019).

Teaching mathematics online for elementary school teachers is particularly challenging due to the difficulty in presenting concrete examples, tools, and media in a virtual setting. This issue is closely related to teachers' ability to effectively utilize technology-based learning tools. Many educators face significant challenges in leveraging these technologies, despite the availability of specific applications designed to serve as media or teaching aids that can be presented online (Habibah et al., 2021; Hodge-Zickerman et al., 2021). The sudden transition to online learning during the COVID-19 pandemic highlighted these difficulties, as many teachers were unprepared for the shift and struggled to adapt their teaching methods to the new format (Goudarzi et al., 2023).

Despite these challenges, the utilisation of media or technology-based teaching aids has shown to positively impact the learning process (Abdulrahaman et al., 2020). Properly implemented, these tools can transform the learning environment from being teacher-centered to student-centered, fostering a more engaging and interactive experience for students (Amedu & Hollebrands, 2022; Coleman et al., 2016). For example, animated teaching aids can help instill basic mathematical concepts while making the learning process more enjoyable and engaging for young learners (Isroqmi, 2020). This shift not only enhances students' understanding but also increases their motivation and interest in the subject matter.

Furthermore, the effective use of technology-based media in teaching mathematics can address some of the inherent limitations of online education. By incorporating interactive elements and visual aids, teachers can better illustrate complex mathematical concepts and provide students with a more comprehensive understanding of the material (Amedu & Hollebrands, 2022). This approach not only helps in overcoming the barriers posed by the lack of physical presence but also leverages the strengths of digital tools to create a more dynamic and effective learning environment (Goudarzi et al., 2023; Hodge-Zickerman et al., 2021).

Teaching mathematics online is challenging because it requires direct interaction and hands-on practice. Online learning often lacks real-time engagement and immediate feedback, making it harder for students to understand abstract concepts. For example, WhatsApp, though widely used, is less effective for mathematics instruction. Daheri et al. (2020) found that it fails to support active learning and does not develop students' affective and psychomotor skills adequately. These skills are essential in mathematics, where students benefit from manipulating materials and teacher guidance. This highlights the need for more interactive, media-rich platforms in online math education.

Research indicates that while platforms like Zoom and WhatsApp can be effective for delivering theoretical content and theory-practical subjects, they fall short when it comes to practical and field-based subjects (Hikmat et al., 2020; Morrison-Smith & Ruiz, 2020; Wegner et al., 2024). Mathematics, which often requires students to engage in problem-solving and hands-on activities, suffers from these limitations. The lack of real-time interaction and the difficulty in demonstrating

complex concepts through text or static images make it challenging fmopror teachers to convey mathematical ideas effectively. This has led to a reliance on less interactive methods, which do not fully engage students or support their learning needs.

Furthermore, the use of WhatsApp specifically has been criticized for its ineffectiveness in practical applications and in teaching mathematics at the elementary level (Khasanah et al., 2021; Rahayu et al., 2021). The platform's limitations in facilitating interactive and engaging lessons mean that students are less likely to develop a deep understanding of mathematical concepts. This is particularly problematic for younger students who require more guided practice and interactive learning experiences to grasp foundational mathematical skills. As a result, there is a growing need for more robust and interactive online teaching tools that can better support the unique demands of mathematics education (Muir et al., 2022; Rapanta et al., 2021; UNICEF, 2021).

Students often face significant challenges in understanding concepts and performing calculations in online mathematics learning environments. Several studies have confirmed that students struggle with various mathematical concepts, which can be attributed to multiple factors (Alfiyah et al., 2021; Amran et al., 2021; Riskawati et al., 2021; Sari, 2020). These include spatial relationship disturbances, visual perception abnormalities, difficulties in understanding and using symbols, and challenges related to language and reading comprehension (Bringula et al., 2021a; Sari, 2020). These issues are exacerbated in an online setting where the lack of physical interaction and immediate feedback can hinder the learning process (Li & Schoenfeld, 2019).

The core issue in online mathematics learning lies in the mismatch between topic complexity and the technological support available. Teachers also encounter substantial difficulties when trying to convey mathematical concepts effectively in an online format (Komalasari & Widada, 2022). The transition from traditional classroom teaching to online platforms requires educators to adapt their instructional strategies significantly. They must find ways to ensure that students grasp each concept thoroughly, which can be particularly challenging without the ability to provide real-time, hands-on guidance (Hilliam et al., 2021). Additionally, teachers often struggle with illustrating solution steps using mathematical symbols in a digital format, which can lead to misunderstandings and further complicate the learning process (Sukma & Priatna, 2021).

Moreover, the effectiveness of online mathematics instruction is heavily dependent on the teacher's ability to engage students and maintain their interest. This involves not only presenting the material in an accessible and understandable manner but also addressing the individual needs of students who may have varying levels of prior knowledge and different learning styles. The lack of face-to-face interaction can make it difficult for teachers to gauge student comprehension and provide timely interventions, which are crucial for overcoming learning obstacles and achieving educational objectives.

The assessment process conducted by teachers through online mathematics learning presents several significant challenges. One primary difficulty is accurately assessing students' learning outcomes. Teachers must determine the appropriate types of assessments, create effective assessment instruments, and establish fair scoring methods (Komalasari & Widada, 2022). Additionally, they need to provide remediation and enrichment opportunities tailored to individual student needs. These tasks are complicated by the lack of direct interaction, which makes it harder for teachers to gauge students' understanding and progress. The transition to online learning has forced educators to adapt quickly, often without adequate preparation, leading to a reliance on digital tools that may not fully capture students' abilities (Cusi et al., 2023; Sumandya et al., 2023).

In addition, the reliability of online assessment systems is a major concern. Without the ability to monitor students during exams, ensuring the integrity and security of the assessment process becomes problematic. This lack of supervision can lead to issues such as cheating, which undermines the validity of the assessments (Alqiam, 2021). Teachers also struggle to maintain the pedagogical continuity required for effective learning, as the digital environment can create new barriers to communication and interaction. Despite these challenges, the experience has highlighted the need for innovative approaches to assessment that can leverage technology to provide more individualized and adaptive support for students (Weigand et al., 2024).

These findings support constructivist learning theories (Piaget, Vygotsky), which emphasize the importance of active learning, scaffolding, and social interaction—elements often diminished in online settings. Several studies have highlighted the effectiveness of online mathematics learning, contingent upon teachers' proficiency in creating diverse and engaging online learning materials (Kusumaningrum & Wijayanto, 2020; Turmuzi & Lu'luilmaknun, 2023). These materials include texts, videos, animations, and interactive tools, which are crucial for maintaining student engagement and enhancing understanding. For instance, research indicates that the use of multiple representations, such as visual aids and real-world examples, supports the development of mathematical connections, reasoning, and problem-solving skills (Vale & Barbosa, 2023). Additionally, the ability to design and implement these resources effectively can significantly impact students' learning experiences and outcomes in an online environment.

The study found a clear relationship between the complexity of a topic and the effectiveness of the digital tools used. Teachers who had access to visual and interactive tools experienced fewer difficulties. Moreover, collaborative efforts among teachers are essential for fostering innovation in online mathematics education (Turmuzi & Lu'luilmaknun, 2023). By working together, teachers can share best practices, develop new instructional strategies, and create a more cohesive and supportive learning environment. This collaboration can lead to the development of more effective teaching methods and materials, ultimately benefiting students. For example, studies have shown that active learning strategies, which often involve collaborative work and mathematical communication, enable the emergence of different strategies to solve mathematical tasks (Hollebrands et al., 2021). Therefore, fostering a collaborative culture among educators is vital for the continuous improvement and success of online mathematics education (Bringula et al., 2021b).

Conclusion

This study concluded that online mathematics instruction in Indonesian elementary schools faced significant challenges, particularly in delivering abstract and visual-spatial topics such as geometry, fractions, and 3D shapes. These difficulties were closely linked to the lack of interactive media and real-time engagement tools. Video conferencing applications were found to be the most effective digital platforms, while static tools like WhatsApp hindered comprehension. Therefore, it is recommended that schools and policymakers invest in training teachers to use media-rich applications and develop subject-specific digital resources. Future researchers are encouraged to explore the impact of interactive technologies on student learning outcomes in mathematics through experimental or mixed-method approaches.

Acknowledgements

We would like to express our sincere gratitude to the Ministry of Education and Culture of Indonesia for their generous funding and support of this research. This article is part of a research project funded by the Ministry of Education and Culture of Indonesia. Their commitment to advancing educational research has been instrumental in the successful completion of this study.

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