

Examining Readiness of Physical Education Facilities in Primary Schools and Their Role in Supporting Learning Activities

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ABSTRACT

Background: Readiness of Physical Education facilities affects whether primary-school PE can be delivered safely and through meaningful practice. Differences in availability, condition, and ownership across schools make a clear readiness profile necessary for improvement planning.

Aims: This study describes the readiness of PE facilities in public primary schools and explains their function as practical support for PE instruction.

Methods: A descriptive quantitative survey was carried out in 14 public primary schools. Observation and document review were used to complete an inventory covering the number of facility items, their condition (good or poor), and ownership status (owned, borrowed, or rented). Findings were summarized using percentage-based descriptive statistics.

Results: Across the schools, 1,939 facility units were identified, with 1,558 in good condition and 391 in poor condition. No school was categorized as “very poor” (0%). The distribution showed 35.7% of schools in the “poor” category, 28.6% “moderate,” 28.6% “good,” and 7.1% “very good,” indicating an overall readiness level concentrated in the moderate-to-good range (57.2%). In several cases, core infrastructure still relied on borrowed spaces, and aquatic learning activities could not be conducted because no supporting facilities were available.

Conclusion: Overall facility readiness is moderate to good but not evenly shared among schools. Improvement efforts should focus on securing essential infrastructure, maintaining items in declining condition, and expanding access to facilities that enable a wider range of PE learning activities.

Keyword: Descriptive quantitative survey; Facility readiness; Infrastructure availability; Physical education facilities;

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INTRODUCTION

The quality of Physical Education in primary schools is increasingly urgent because PE is expected to be safe, practical, and meaningful rather than purely routine activity (Cale, 2023; Durden-Myers & Bartle, 2023). In the early grades, students learn largely through movement and direct experience, so the lesson cannot be separated from the material environment that makes practice possible. When infrastructure is absent or unreliable, teachers may be forced to reduce lesson variety and narrow learning goals to what can be done with minimal tools. Such constraints are not merely technical, because they shape what students can actually practice and master. This urgency is intensified by the expectation that schools provide equitable learning opportunities regardless of location or resource level (Cairney & Kippin, 2022; de & Palmer, 2021). Facility readiness therefore becomes a key issue in determining whether PE learning can be implemented as intended. A readiness profile also helps clarify whether limitations are rooted in availability, condition, or access. For that reason, facility readiness deserves careful examination in primary education settings.

Physical Education is designed to develop basic motor competence, physical fitness, coordination, and habits that support lifelong health (Habyarimana et al., 2022; Piotrowski et al., 2025). In the primary-school context, these outcomes depend on repeated practice through structured activities, not only explanation or classroom discussion. The feasibility of such practice is strongly influenced by access to appropriate spaces and functional equipment. Running, throwing, jumping, balance, and simple games require safe ground, adequate room, and tools that match children's needs. Without these elements, lessons often shift toward simplified drills or verbal instruction, which weakens the practical character of PE. Teachers may also avoid certain movement activities if they cannot ensure safety. Over time, limited practice opportunities can reduce students' enthusiasm because lessons become monotonous or overly restricted (Tulaskar & Turunen, 2022). This logic underscores why facilities are not an accessory, but a practical foundation for PE learning.

Across schools, PE facilities frequently show uneven patterns in both quantity and usability (Karanasios & Papastergiou, 2024; Roccliffe et al., 2023a). Some schools may have equipment in sufficient numbers, while others rely on a small set of tools that must be shared across classes. Even when items exist, they may not be usable because of damage, wear, or missing components. This creates a gap between nominal availability and real readiness. Such differences matter because teachers plan lessons based on what students can safely use. When resources are scarce, the teacher's instructional choices become constrained by logistics rather than by pedagogical intent. Students in different schools may therefore receive learning experiences that differ substantially in richness and diversity (Holland & Ford, 2021; Starck et al., 2021). A descriptive readiness assessment is needed to capture these differences with clarity. Without such mapping, infrastructure disparity remains an assumption rather than an evidence-based finding.

The physical condition of facilities is a central component of readiness because it directly affects safety and learning continuity (Lassa et al., 2023; Shah et al., 2021). Damaged or poorly maintained equipment introduces risk, and risk management becomes an immediate concern in PE classes. In many cases, teachers respond by excluding certain activities, which changes the lesson structure and reduces skill exposure. This is important because the presence of equipment alone does not guarantee instructional benefit if it cannot be used. Condition also determines how often facilities can be employed across learning cycles, influencing repetition and reinforcement. If a school lacks maintenance routines, gradual deterioration can silently reduce the range of feasible activities.

Consequently, assessing condition is not only about labeling items as good or poor, but about understanding the practical limits it imposes on teaching (Krieglstein et al., 2023). From this perspective, condition is an instructional variable as much as it is an infrastructural one.

Ownership status also influences readiness because it determines access stability (Cherotich et al., 2021; Şahin & Kaplan, 2024). Schools that depend on borrowed or rented facilities often face uncertainty in scheduling and continuity. A borrowed field or shared space may not always be available when PE is timetabled, forcing teachers to redesign lessons at short notice. This unpredictability reduces instructional consistency and can fragment learning progress across weeks. Ownership constraints can also restrict the type of activities conducted if the external facility does not allow certain equipment use or does not meet safety expectations. In such contexts, PE planning becomes reactive rather than systematic. Therefore, readiness cannot be assessed solely by counting items or describing condition, because access rules and ownership arrangements shape real usability. A comprehensive readiness profile needs to account for this dimension to reflect classroom reality (Gheysens et al., 2022; Tsivitanidou et al., 2021).

From a school management perspective, readiness information is necessary for practical planning and improvement (Domlyn et al., 2021; Vaishnavi & Suresh, 2020)]. Decisions about procurement, repairs, and scheduling require evidence on which facilities are missing, which are declining, and which are constrained by access. Without clear documentation, interventions risk being misdirected, for example purchasing new items while essential infrastructure remains unavailable. Descriptive data help schools prioritize what matters most for instruction, rather than what is easiest to purchase. This approach also supports incremental improvement, which is often more realistic than large-scale infrastructure upgrades. In addition, readiness mapping can serve as baseline evidence for future monitoring, allowing schools to evaluate whether changes lead to better learning support. Thus, descriptive readiness studies have value beyond reporting, because they enable strategic action (Naseer et al., 2025). In this sense, the study's focus aligns with practical improvement needs in primary education.

The existing literature widely recognizes that facilities influence how PE is taught and experienced by students (Aartun et al., 2022; Roccliffe et al., 2023b). Studies commonly report that adequate infrastructure expands instructional options and supports safe practice-based learning. However, many works emphasize broad infrastructure or student outcomes while offering limited detail on PE-specific facility profiles. Evidence that integrates availability, condition, and ownership within one descriptive framework is still not sufficiently common, even though these components jointly determine readiness. This limitation leaves a gap between the general claim that facilities matter and the concrete information schools need to improve. Context-specific descriptive studies can fill this gap by presenting detailed readiness patterns that are directly interpretable by practitioners. Such work is particularly useful in primary education, where children's safety and age-appropriate equipment are critical concerns (Jerebine et al., 2022; Nottingham et al., 2022). Therefore, mapping readiness remains a relevant contribution to the applied PE field.

For these reasons, examining PE facility readiness provides a grounded way to understand learning support conditions in primary schools. Rather than overstating causal effects on achievement, a readiness approach focuses on enabling conditions that make practice possible and safe (Kimjeon & Davidsson, 2022; Street, 2021). This aligns with descriptive survey designs that document the present situation as a basis for improvement. By capturing availability, condition, and ownership status together, the analysis can clarify which constraints are material, which are maintenance-related, and which are access-related. This clarity is important because different constraints require different interventions. Ultimately, a readiness profile supports more realistic

planning to strengthen PE learning implementation. In primary schools, where PE depends on practice, facility readiness is closely tied to what can be taught in real time. Therefore, readiness assessment is a meaningful and practical starting point for improving PE learning quality (Modell & Gerdin, 2022).

Physical Education in primary schools is delivered primarily through practice, meaning that the feasibility and quality of learning are closely tied to the spaces and equipment schools can provide. Research on sports infrastructure by Tatcha et al. (2025) demonstrates that the type and availability of facilities directly shape the range of activities that can be implemented in school settings. Studies examining public facility availability and participation patterns, such as those by Yan et al. (2025), further indicate that access to usable facilities supports continuity and engagement in physical activity. Facility readiness is therefore increasingly understood not only as presence, but also as usability and safety, a perspective aligned with school-based resource analyses by Piórecka et al. (2025) and Kawalec (2020). In elementary PE contexts, limited or uneven facilities often constrain instructional choices, as reported by Hiskya et al. (2025), where teachers adapted learning activities to available resources. Access stability also emerges as a critical issue when schools rely on borrowed or shared facilities, a challenge similarly noted in community-level studies by Cho and Cho (2018). Participation-focused research by Amerzadeh et al. (2025) highlights how infrastructural constraints can become barriers to sustained engagement. Broader synthesis work by Guo (2025) links environmental and facility limitations to patterns of physical inactivity among children and adolescents. Contextual analyses, including Kondrateva (2025) and urban infrastructure studies by Gherheş et al. (2025), further illustrate that facility readiness is shaped by local governance and resource conditions. Collectively, these studies suggest that PE facility readiness should be examined through availability, condition, and access stability, yet integrated descriptive evidence at the primary-school level remains limited, justifying the need for focused readiness assessments to clarify how facilities support learning activities without overstating causal effects.

Physical Education in primary schools relies heavily on direct practice, which means that the effectiveness of instruction cannot be separated from the readiness of supporting facilities. In many schools, decisions related to PE implementation are made without a clear picture of whether existing facilities are sufficient, functional, and consistently accessible. This situation can lead to mismatches between curriculum expectations and what teachers can realistically conduct in class. At the primary level, where safety, space, and age-appropriate equipment are especially important, such mismatches may reduce both learning quality and instructional confidence. A readiness-based perspective offers a practical way to examine these conditions by focusing on how facilities actually function in everyday teaching situations. By documenting availability, condition, and ownership status together, readiness analysis provides information that is directly relevant to instructional planning and facility management. For these reasons, examining PE facility readiness is necessary to support more grounded and context-sensitive implementation of Physical Education in primary schools.

Existing research has established that facilities play a role in shaping Physical Education learning environments and participation patterns. However, much of the literature concentrates on general sports infrastructure, student outcomes, or community-level facilities, rather than detailed PE facility conditions within primary schools. Studies that focus specifically on primary education often discuss learning outcomes without providing systematic descriptions of the facilities that support those outcomes. Moreover, research that integrates availability, physical condition, and ownership status into a single descriptive framework remains limited. This lack of integration makes it difficult to understand which constraints stem from shortages, maintenance issues, or access arrangements. As a result, schools and policymakers lack concrete evidence to guide targeted

improvements. Addressing this gap requires descriptive research that maps facility readiness as it is experienced in daily PE instruction at the primary school level.

The purpose of this study is to examine the readiness of Physical Education facilities in primary schools and to describe how these facilities support PE learning activities. The study focuses on three key dimensions of readiness, namely facility availability, physical condition, and ownership status. Using a descriptive quantitative approach, the research aims to present a clear and realistic profile of facility readiness rather than to test causal relationships with learning outcomes. By documenting current conditions, the study seeks to provide baseline evidence that can inform instructional decision making and facility management. The findings are expected to help schools identify practical constraints and prioritize improvements that directly support PE teaching and learning.

METHOD

Research Design

This research used a descriptive quantitative design to document the readiness of Physical Education facilities in primary schools. The design was chosen because the study aims to portray existing conditions rather than to test causal effects or experimental relationships. A survey orientation was applied at the school level, focusing on what facilities are available, how usable they are, and whether access is stable. Data were gathered through direct inspection of facilities and strengthened by supporting school records to reduce reliance on self-report. The study procedure followed a clear sequence, starting from defining the focus of assessment and ending with interpretation of the readiness profile. The procedural flow of the study is presented in Figure 1.

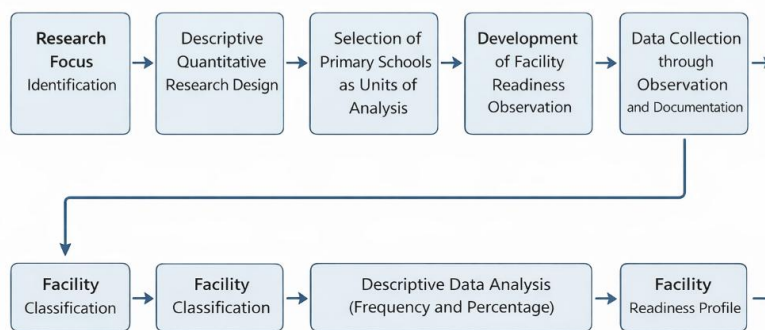


Figure 1. Research Flowchart for Assessing the Readiness of Physical Education Facilities in Primary Schools

Participants

The units of analysis were 14 public primary schools included in the survey. Schools were treated as participants because the object of assessment was facility readiness at the institutional level, not student performance or teacher attitudes. Each school contributed information through its existing PE equipment and supporting infrastructure. Using schools as the unit of analysis allowed readiness patterns to be compared across sites using the same indicators. This approach fits the purpose of producing a baseline facility profile that reflects day-to-day instructional conditions. The sampling frame was aligned with the study context described in the source document and intended

to capture variation in facility provision across schools.

Instrument

Data were collected using a structured facility readiness observation sheet prepared for this study. The instrument recorded the number of facility items, their physical condition, and their ownership status to reflect access stability. Condition was categorized as good or poor based on whether the item was safe and feasible for instructional use, rather than on appearance alone. Ownership was documented as school-owned, borrowed, or rented because this factor affects scheduling flexibility and continuity of use. The observation sheet was completed through on-site checks and cross-referenced with available school documentation when relevant. This procedure supported consistency of measurement across all schools.

Data Analysis

Analysis was conducted descriptively using frequency counts and percentages. Facility data were first tabulated by school and then summarized to describe overall patterns of availability, condition, and ownership status. Schools were subsequently grouped into readiness levels based on the proportion of facilities classified as usable, providing a practical readiness profile. The analysis did not employ inferential tests because the study was designed to describe the present situation rather than to estimate population parameters or causal relations. Findings were reported through tables and narrative interpretation to clarify how facility readiness supports or limits PE learning activities. This analytical strategy ensures the results remain consistent with the descriptive design and the stated aims of the study.

RESULTS AND DISCUSSION

Result

This section presents the descriptive findings on the readiness of Physical Education facilities in public primary schools, with emphasis on facility condition and overall readiness at the school level. Across the surveyed schools, a total of 1,939 Physical Education facility units were identified and assessed for their suitability in supporting learning activities.

As shown in Table 1, most of the recorded facilities were classified as being in good physical condition. Specifically, 1,558 units, representing 80.35% of the total facilities, were considered functional and safe for instructional use. In contrast, 391 units, or 19.65%, were categorized as being in poor condition. Although these facilities were still present, their limited usability indicates potential safety risks or functional constraints during Physical Education lessons. This distribution suggests that while basic facility support is largely available, maintenance-related issues remain evident in a substantial portion of the infrastructure.

Table 1. Distribution of Physical Education Facilities Based on Physical Condition

Facility Condition	Number of Units	Percentage (%)
Good condition	1,558	80.35
Poor condition	391	19.65
Total	1,939	100.00

To capture readiness at the institutional level, schools were subsequently grouped into readiness categories based on the condition and availability of their facilities. The distribution of these categories is presented in Figure 1. None of the surveyed schools were classified as having very

poor readiness. However, more than one-third of schools (35.7%) fell into the poor readiness category. A similar proportion of schools were classified as moderate (28.6%) and good (28.6), while only a small number of schools (7.1%) reached the very good readiness level.

The pattern illustrated in Figure 1 indicates that overall readiness is uneven across schools. Although extreme deprivation is absent, most schools operate within a range of limited to adequate readiness rather than optimal conditions. When considered together, the findings from Table 1 and Figure 1 reveal a contrast between facility-level usability and school-level readiness. While many individual facilities remain functional, disparities in quantity, condition, and distribution contribute to uneven readiness profiles among schools.

Discussion

The results of this study show that the readiness of Physical Education facilities in primary schools cannot be understood simply by counting available equipment. Although a large proportion of facilities were found to be in usable condition, readiness at the school level remained uneven. This indicates that readiness is shaped by how facilities are distributed, accessed, and maintained rather than by physical condition alone. Similar conclusions were drawn by Tatcha et al. (2025), who emphasized that facility adequacy must be interpreted within the instructional setting. In primary schools, limited sets of equipment may restrict class activities even when individual items function well. As a result, the same curriculum may be implemented very differently across schools. The present findings therefore highlight readiness as a contextual condition rather than a fixed attribute. This perspective is important for interpreting facility data realistically.

A closer look at readiness categories reveals that most schools were positioned at poor to moderate levels rather than at optimal readiness. This pattern suggests that many schools operate with minimal margins for instructional flexibility. Teachers in such contexts often need to adjust lesson plans to match existing facilities. Hiskya et al. (2025) observed similar adaptations in elementary PE settings, where limited facilities narrowed activity options. These adaptations are usually pragmatic responses to constraints rather than pedagogical choices. However, repeated reliance on simplified activities may reduce students' exposure to varied movement experiences. Over time, this may influence motivation and skill development. The findings of this study help explain why PE learning quality may differ across schools with similar curricular expectations.

The relationship between facility quantity and instructional feasibility is also evident in the results. Even when facilities are in good condition, insufficient quantities can limit participation and lesson flow. Yan et al. (2025) noted that availability must be assessed relative to the number of users and instructional demands. In primary school PE classes, where activities involve whole groups and repeated practice, limited quantities can create bottlenecks. Teachers may respond by rotating students or reducing repetitions. Such adjustments alter the intended learning rhythm of the lesson. This may lead to uneven engagement among students. Therefore, readiness assessments should consider quantity as a functional constraint, not merely a descriptive statistic.

Facility condition remains a critical component of readiness because it directly affects safety and confidence during instruction. The presence of facilities in poor condition indicates that maintenance remains an unresolved issue. Piórecka et al. (2025) reported that poorly maintained facilities are often excluded from use despite being officially recorded. Teachers may avoid such equipment to prevent injury or disruption. This avoidance reduces the effective pool of usable facilities. Consequently, the gap between recorded availability and actual usability widens. The present findings reflect this pattern, showing that poor condition contributes to reduced readiness. Addressing maintenance issues could therefore improve readiness without large infrastructure investments.

Ownership status further complicates readiness because it affects access stability. Facilities that are borrowed or shared cannot always be used according to school schedules. Highlighted that unstable access undermines continuity in physical activity programs. In the context of this study, reliance on external facilities may force teachers to change lesson plans at short notice. Such changes disrupt instructional coherence and progression. Over time, inconsistent access can weaken the structure of PE programs. This issue is particularly relevant in primary schools, where routine and continuity support learning. The findings support the inclusion of ownership status as a key readiness indicator.

The complete absence of aquatic facilities illustrates a structural gap between curriculum content and infrastructural reality. While aquatic activities are often included as part of PE curricula, their implementation requires specialized facilities. Amerzadeh et al. (2025) documented similar mismatches between program goals and facility availability. In such situations, teachers may omit entire learning units. This omission reflects structural limitation rather than instructional neglect. The findings of this study confirm that certain curricular components remain inaccessible due to facility constraints. Readiness assessments can help identify these gaps clearly. Such clarity is essential for realistic curriculum planning.

From a broader viewpoint, uneven readiness patterns reflect differences in how schools manage and prioritize facilities. Guo (2025) emphasized that environmental conditions shape children's opportunities for physical activity. Schools with higher readiness are better positioned to provide consistent and varied PE experiences. In contrast, schools with lower readiness may struggle to meet even basic instructional requirements. These disparities raise concerns about equity in Physical Education provision. Although this study does not measure learning outcomes, it identifies conditions that precede them. Understanding these conditions is necessary before outcome-focused interventions are designed. Readiness thus functions as a foundational layer in PE provision.

Institutional context also plays a role in shaping facility readiness. Kondrateva (2019) noted that organizational capacity influences how facilities are maintained and utilized. Schools with limited administrative support may find it difficult to sustain facility quality. Gherheş et al. (2025) similarly showed that local governance and resource contexts affect infrastructure conditions. The variation observed in this study aligns with these insights. Despite operating under similar curricular frameworks, schools displayed different readiness levels. This suggests that local management practices matter. Readiness should therefore be interpreted within institutional and contextual boundaries.

An important contribution of this study lies in its descriptive approach to readiness assessment. Rather than attempting to establish causal links with learning outcomes, the study focuses on documenting enabling conditions. This approach avoids overstating claims while still offering practical insights. By integrating availability, condition, and ownership status, the analysis provides a comprehensive picture of readiness. Previous studies have often examined these dimensions separately. Combining them improves interpretability and practical relevance. The findings can inform targeted improvements without requiring complex statistical models. This strengthens the applied value of the research.

Overall, the discussion confirms that Physical Education facility readiness shapes the boundaries of instructional practice in primary schools. Readiness does not determine learning outcomes directly, but it influences what can be taught, how safely activities can be conducted, and how consistently lessons can be delivered. The findings align with existing literature while extending it through a focused primary school perspective. By presenting an integrated readiness profile, the study contributes evidence that is both context sensitive and practically meaningful. These insights

can support better planning and management of PE facilities. In this way, readiness assessment serves as a realistic starting point for improving Physical Education learning.

Implications

The results of this study suggest several practical implications for improving Physical Education implementation in primary schools. The uneven levels of facility readiness indicate that challenges are not always caused by the absence of facilities, but often by issues related to maintenance, distribution, and access stability. This means that targeted improvement strategies, such as repairing or reorganizing existing facilities, may be more effective than focusing solely on new procurement. Information on ownership status also highlights the importance of securing consistent access, especially for schools that depend on shared or borrowed facilities. Stable access arrangements can reduce disruption and allow teachers to plan lessons more systematically. From an instructional perspective, awareness of facility readiness can help teachers design learning activities that are both safe and feasible within existing conditions. At the policy level, readiness profiling provides evidence that can support more informed decisions regarding infrastructure planning and resource allocation.

Limitations

This study has several limitations that need to be considered when interpreting the findings. First, the descriptive nature of the research does not permit conclusions about the impact of facility readiness on student learning outcomes. The study focused on observable facility conditions and did not include qualitative insights from teachers or students, which may have enriched the interpretation of how readiness affects instructional practice. In addition, the scope of the study was limited to a specific group of public primary schools, which may reduce the applicability of the findings to other educational settings. The categorization of facility condition was based on practical usability and safety indicators, which, while appropriate for instructional purposes, may not fully reflect long-term structural quality. As a result, the findings should be understood as a snapshot of current readiness rather than a comprehensive evaluation of infrastructure quality.

Suggestions

Further research could extend this study by incorporating teacher perspectives to explore how facility readiness influences daily instructional decisions. Longitudinal approaches may also be useful to track changes in facility readiness and examine how improvements or declines affect PE implementation over time. Comparative studies involving different regions or types of schools could provide a broader understanding of infrastructural disparities. From a practical standpoint, schools are encouraged to adopt routine facility readiness assessments as part of ongoing management practices. Such assessments can help identify emerging issues before they significantly disrupt instruction. In addition, closer alignment between curriculum expectations and actual facility conditions may help ensure that PE learning objectives remain realistic and achievable.

CONCLUSIONS

This study shows that Physical Education facility readiness in primary schools is adequate in general, but not evenly shared across schools. Most recorded facilities were physically usable, yet overall readiness was shaped by more than condition alone, including how many items were available, how they were distributed, and whether access was stable. The readiness distribution indicates that a substantial proportion of schools still operate in poor to moderate categories, suggesting limited room for delivering varied and consistent PE learning experiences. Dependence

on borrowed or shared facilities adds another layer of constraint because it can reduce scheduling certainty and weaken instructional continuity. In addition, the absence of specialized facilities, such as those needed for aquatic activities, points to a practical gap between curriculum expectations and what schools can realistically implement. These findings do not claim direct effects on learning outcomes, but they clarify the enabling conditions that set the boundaries for safe and feasible PE instruction. By combining availability, physical condition, and ownership status in one descriptive assessment, the study provides a clear readiness profile grounded in everyday school practice. Overall, the evidence supports the use of readiness mapping as a baseline for targeted improvements aimed at strengthening both the quality and equity of Physical Education in primary schools.

AUTHOR'S CONTRIBUTION

Jupriyono was responsible for the study conceptualization, research design, instrument development, data collection, data processing, data analysis, and writing of the original manuscript draft. Bertika Kusuma Prastiwi. contributed through academic supervision, refinement of the research framework, methodological guidance, and substantive review of the manuscript for intellectual content. Galih Dwi Pradipt. provided supervision and critical input on the research procedures, supported the interpretation of results, and reviewed the manuscript for clarity, coherence, and academic rigor. All contributors reviewed and approved the final version of the manuscript prior to submission.

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