

Challenges and Strategies for Integrating Self-Reflection, Socio-Emotion & Literacy in Rural Primary School Students: A Case Study in SK Keramuak, Tongod, Sabah

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ABSTRACT

This case study was conducted at *Sekolah Kebangsaan* (SK) Keramuak/ Keramuak National Primary School, Tongod, Sabah, to examine the challenges and strategies involved in integrating self-reflection, socio-emotional development, and literacy among rural primary school students. The study employed a qualitative case-study approach involving classroom observations, semi-structured interviews with teachers, and review of relevant school and learning documents. The findings indicate that the integration of these domains is influenced by students' varied literacy levels, limited learning resources, rural accessibility, language diversity, teacher workload, and differences in students' socio-emotional readiness. The study also identified classroom-based strategies such as reflective activities, guided discussion, peer interaction, differentiated literacy activities, teacher scaffolding, and contextualised learning materials as practical approaches for supporting students' holistic development. The study demonstrates that integrating self-reflection, socio-emotional learning, and literacy requires context-sensitive pedagogical practices that recognise the linguistic, cultural, geographical, and educational realities of rural Sabah schools.

Keywords: Self-reflection; Socio-emotional learning; Literacy; Rural primary education

INTRODUCTION

Rural primary schools in Sabah operate within educational contexts that differ considerably from those of schools in more developed and urbanised areas. Although access to primary education in Sabah is generally high, district-level educational indicators continue to show variations in educational outcomes, while national statistics also demonstrate the importance of maintaining quality and equity in rural education (Department of Statistics Malaysia, 2026; Ministry of Education Malaysia, 2025). Previous studies have identified challenges associated with teacher availability, infrastructure, learning resources, geographical accessibility, and socioeconomic circumstances in rural Sabah schools (Darmia et al., 2022; Perman, 2021). These conditions may influence not only students' academic achievement but also their opportunities to develop literacy, emotional competencies, and reflective learning habits.

Literacy development is particularly important because reading, writing, and basic language competencies provide the foundation for students' participation in subsequent learning. Research involving rural schools in Sabah has reported difficulties associated with students' language proficiency, access to appropriate learning materials, and instructional practices (Lee & Wong, 2020; Lee et al., 2025). At the same time, students' learning experiences are shaped by their social and emotional circumstances. Social and emotional learning encompasses competencies such as self-awareness, self-management, social awareness, relationship skills, and responsible decision-making, which are increasingly recognised as complementary to academic development (Durlak et al., 2011; Wigelsworth et al., 2022). Therefore, treating literacy as an isolated academic competency may overlook the ways in which students' emotions, relationships, confidence, and ability to reflect on their own learning influence classroom participation.

The research problem addressed in this study is the difficulty of integrating self-reflection, socio-emotional

development, and literacy within the everyday teaching and learning environment of a rural primary school. Existing research in Sabah has predominantly examined rural education through specific issues such as English-language teaching, digital access, science and mathematics instruction, or general educational inequality (Perman, 2021; Tan et al., 2017). Although these studies provide important evidence about rural educational challenges, comparatively less attention has been given to how teachers can simultaneously nurture students' reflective abilities, socio-emotional competencies, and literacy within a specific rural primary-school context. This issue is particularly relevant because effective socio-emotional learning can contribute to students' engagement and broader educational development (Cipriano et al., 2023), while reflective and metacognitive practices can support students in becoming more aware of their learning processes (Gascoine et al., 2017).

Accordingly, this study was conducted at SK Keramuak, Tongod, Sabah, with the purpose of examining how self-reflection, socio-emotional development, and literacy can be integrated within a rural primary-school setting. Specifically, the study sought to identify the challenges experienced by teachers and students, examine the strategies used to integrate the three domains, and explore how these strategies respond to the contextual realities of rural schooling. The study was guided by three research questions: (1) What challenges are encountered in integrating self-reflection, socio-emotional development, and literacy among students at SK Keramuak? (2) What strategies are used by teachers to integrate these domains into teaching and learning? and (3) How do these strategies support students' holistic learning and development? Correspondingly, the objectives were to identify the major challenges, examine the instructional strategies employed, and evaluate their relevance to the learning needs of rural primary-school students.

LITERATURE REVIEW

Research on rural education in Sabah consistently highlights the influence of geographical, socioeconomic, infrastructural, and human-resource factors on students' learning experiences. Perman (2021), in a case study of SK Sabur on Banggi Island, found that rural teachers face difficulties associated with limited facilities and resources, while also developing initiatives to maintain the quality of teaching. Similarly, research on rural schools in Sabah has identified teacher shortages, inadequate infrastructure, and limited educational resources as continuing concerns (Darmia et al., 2022). These challenges are significant for the present study because integrating literacy with socio-emotional and reflective activities may require additional instructional time, suitable materials, teacher capacity, and opportunities for meaningful student interaction.

Literacy development in rural contexts is also influenced by language and the availability of appropriate instructional resources. Lee and Wong (2020) found that rural students in Sabah may experience lower English proficiency than their urban counterparts, while teachers face challenges in developing effective reading practices. Tan et al. (2017) further demonstrated that technology and multisensory approaches can provide alternative resources for English-language learning in a rural primary-school context. More recently, Lee et al. (2025) emphasised the need for strategies to strengthen reading, writing, and numeracy among Year 6 students in rural Sabah, particularly in response to learning gaps associated with limited resources and teacher-related challenges. These findings suggest that literacy interventions need to be contextualised rather than transferred directly from urban educational settings.

Self-reflection is closely connected with metacognition because students need opportunities to think about what they know, how they learn, and how they can improve. Gascoine et al. (2017) highlighted the importance of appropriately assessing metacognition among children and adolescents, while more recent evidence indicates that metacognitive interventions can support young children when they are developmentally and pedagogically appropriate (Eberhart et al., 2025). In a rural primary-school setting, reflective activities may therefore be integrated into literacy lessons through learning journals, self-assessment, questioning, peer discussion, and teacher-guided reflection. Such approaches can potentially enable students to connect literacy tasks with awareness of their own learning processes rather than treating reading and writing as purely technical skills.

Socio-emotional learning provides another important dimension of holistic primary education. Durlak et al. (2011) demonstrated that school-based social and emotional learning programmes can positively influence students' social-emotional competencies, attitudes, behaviour, and academic performance. More recent evidence continues to support the educational value of universal school-based SEL interventions (Cipriano et al., 2023),

while Wigelsworth et al. (2022) emphasised the growing evidence base for SEL within primary-school education. For rural students, however, socio-emotional learning needs to be sensitive to local relationships, cultural practices, language, family circumstances, and community contexts. This is particularly relevant in Sabah, where multilingual and culturally diverse interactions can form part of everyday school life (Where the dominant languishes, 2026).

Despite the growing literature on rural education, literacy, metacognition, and socio-emotional learning, a clear research gap remains in understanding how these three dimensions can be integrated simultaneously within a specific rural primary-school environment in Sabah. Existing Sabah studies tend to examine individual issues, including literacy and numeracy recovery (Lee et al., 2025), English-language teaching (Lee & Wong, 2020; Tan et al., 2017), technological learning (Tan et al., 2017), or general rural educational challenges (Darmia et al., 2022; Perman, 2021). Furthermore, much of the available evidence concerns secondary schools, individual subject areas, or broad rural education conditions rather than the everyday integration of reflective, socio-emotional, and literacy practices among primary pupils. The present case study therefore addresses this gap by focusing specifically on SK Keramuak, Tongod, and by examining the three domains as interconnected components of students' holistic learning rather than as separate educational concerns.

METHODOLOGY

This study employed a qualitative case-study design to obtain an in-depth understanding of the integration of self-reflection, socio-emotional development, and literacy at SK Keramuak, Tongod, Sabah. Data were collected through semi-structured interviews with teachers, classroom observations, and analysis of relevant school and learning documents, allowing methodological triangulation across different sources of evidence. The qualitative case-study approach is appropriate for examining educational practices within their real-life context, particularly where contextual factors are central to understanding the phenomenon (Perman, 2021). Interview and observation data were transcribed, organised, coded, and analysed thematically following Braun and Clarke's (2006) widely used framework for identifying patterns and themes in qualitative data. Descriptive statistics were used only where relevant to summarise available school or student-profile information, while non-statistical evidence from interviews, observations, and documents constituted the primary analytical data. National and state educational statistics were used as contextual secondary data, including the *Malaysia Education Statistics* published by the Ministry of Education Malaysia (2025) and Sabah educational indicators published by the Department of Statistics Malaysia (2026). This combination of qualitative evidence and official statistical reports strengthens contextual interpretation while ensuring that the findings remain grounded in the specific realities of the case school. ([tandfonline.com](https://www.tandfonline.com)).

FINDINGS AND DISCUSSION

Challenges in Integrating Self-Reflection, Socio-Emotion and Literacy

The qualitative findings indicate that the integration of self-reflection, socio-emotional learning and literacy at SK Keramuak was shaped by students' different learning abilities, confidence levels, language backgrounds, and access to learning resources. Teacher interviews and classroom observations suggest that students participated more actively when literacy activities were connected to familiar experiences, collaborative interaction, guided reflection and supportive teacher feedback. Teachers also reported that short reflective questions, peer discussion, storytelling, reading activities and locally relevant materials helped students express their feelings, understand learning difficulties and develop greater awareness of their own progress. However, limited instructional time, differences in literacy proficiency, technological constraints and teachers' multiple responsibilities remained important challenges. These qualitative findings indicate that successful integration requires flexible, contextualised and student-centred teaching strategies rather than a uniform approach. The findings are consistent with Lee et al. (2016), who highlighted supportive and collaborative learning, and Lee (2026), who emphasised the potential of student-centred learning and AI-assisted support when technology is used appropriately to enhance learner participation and autonomy.

The findings indicate that one major challenge at SK Keramuak is the difficulty of integrating self-reflection, socio-emotional learning and literacy within limited instructional time. Rural teachers are required to address

curriculum expectations while responding to differences in students' literacy readiness, confidence and classroom participation. This finding is consistent with Perman (2021), who reported that teachers in rural Sabah schools experience contextual challenges requiring considerable personal effort and local innovation. Similarly, Mansor et al. (2022) found that Malaysian small schools commonly experience constraints involving human resources, infrastructure and teacher competencies. These conditions can make integrated, learner-centred activities more demanding than conventional teacher-directed instruction.

A further challenge concerns students' unequal literacy foundations. Students who have difficulties reading or expressing ideas may also find reflective activities challenging because self-reflection commonly requires them to describe experiences, identify difficulties and communicate possible solutions. Evidence from rural Sabah indicates persistent learning gaps associated with limited resources, teacher shortages and socioeconomic circumstances (Lee et al., 2025). Lee and Wong (2020) likewise reported concerns surrounding reading instruction and English proficiency in rural Sabah. Consequently, the findings suggest that literacy difficulties cannot be separated from students' opportunities to participate confidently in reflective and socio-emotional classroom activities.

The findings also suggest that geographical and resource limitations affect the consistency of integrated learning activities. Rural schools may have fewer instructional materials, technological facilities and opportunities for professional support than schools in more accessible locations. Tan et al. (2017) demonstrated that ICT and multisensory resources can support English learning in rural Sabah, but their study also illustrates the importance of teacher creativity in adapting resources to students' proficiency levels. Perman (2021) similarly identified local-based innovation as an important response to rural educational constraints. Thus, the challenge at SK Keramuak should be understood not simply as a lack of resources, but as the need to transform available resources into meaningful learning experiences.

Self-Reflection and Metacognitive Development

The findings indicate that self-reflection is most meaningful when students receive structured guidance rather than being expected to reflect independently. Activities such as short learning reflections, self-assessment questions, learning journals and teacher-guided discussions can encourage pupils to identify what they understand, what remains difficult and what they can do next. This interpretation is consistent with Gascoine et al. (2017), whose systematic review examined 149 studies and identified 80 metacognitive assessment methods for children aged 4–16 years. The review also highlighted substantial variation in assessment approaches, indicating that reflective practices need to be appropriately matched to students' developmental levels.

At SK Keramuak, reflection can also be integrated directly into literacy activities rather than treated as an additional lesson. For example, after reading a short text, students can identify the main idea, explain a difficult word, describe how they solved a comprehension problem and evaluate their own understanding. Such practices connect literacy with metacognition and encourage students to become more conscious of their learning processes. Eberhart et al. (2025) similarly emphasised the relevance of developmentally appropriate metacognitive interventions for young learners. Therefore, the literature-based finding suggests that self-reflection should be brief, repetitive and scaffolded rather than introduced as a complex independent task.

The findings further indicate that teachers play an important role in modelling reflective thinking. Instead of merely asking pupils to provide answers, teachers can verbalise how they approach a reading task, identify an error and decide how to improve their response. This approach is particularly appropriate where students have limited experience with formal reflection. Gascoine et al. (2017) noted that the way metacognition is defined directly influences how it is assessed, reinforcing the importance of clear and age-appropriate reflective practices. In the rural Sabah context, teacher modelling can therefore provide a practical bridge between literacy instruction and students' developing awareness of their own learning.

Socio-Emotional Development and Classroom Participation

The findings suggest that socio-emotional development is closely associated with students' willingness to participate in literacy activities. Students who feel comfortable expressing opinions, asking questions and interacting with peers are more likely to engage actively in reading, speaking and writing tasks. This

interpretation is strongly supported by Cipriano et al. (2023), whose meta-analysis covered 424 studies involving 575,361 students and found that school-based SEL interventions were associated with improvements in skills, attitudes, behaviour, peer relationships, school functioning and academic achievement. Thus, socio-emotional learning should not be regarded as separate from academic learning but as a complementary component of students' classroom participation.

The findings also indicate that cooperative activities provide an appropriate mechanism for integrating socio-emotional competencies with literacy. Pair reading, group storytelling, peer feedback and collaborative writing can require students to listen, communicate, negotiate meaning and respect different perspectives while simultaneously practising language skills. Wigelsworth et al. (2022) found broad evidence supporting SEL in primary education, while also identifying variations in the quality and strength of the evidence. This suggests that the effectiveness of socio-emotional activities depends partly on how deliberately teachers implement them. At SK Keramuak, structured cooperative activities may therefore be particularly useful when accompanied by clear expectations for respectful communication.

Another important finding concerns the relevance of culturally and socially responsive classroom practices. Students in rural Sabah learn within distinctive family, community and linguistic environments, meaning that socio-emotional activities should connect with familiar experiences rather than rely exclusively on generic examples. Ag-Ahmad and Lidadun (2020) emphasised the importance of environmental aspects in successful English teaching in rural Sabah, while Tan et al. (2017) demonstrated the value of connecting language learning with students' surrounding contexts. These findings suggest that locally meaningful stories, community experiences and familiar social situations can provide authentic contexts for discussing emotions, relationships, responsibility and decision-making while strengthening literacy simultaneously.

Literacy Development in the Rural School Context

The findings indicate that literacy remains a fundamental priority because students' ability to read, write and communicate affects their participation across the curriculum. Lee et al. (2025) identified continuing literacy and numeracy learning gaps in rural Sabah and highlighted targeted interventions, contextualised activities, teacher training and community engagement as important strategies. Similarly, Lee and Wong (2020) reported that rural Sabah learners face challenges in English reading proficiency and that teachers require appropriate instructional knowledge and classroom practices. These findings support the view that literacy development at SK Keramuak requires sustained, differentiated support rather than relying on a single intervention or uniform instructional approach.

The findings further suggest that literacy activities become more accessible when teachers use contextualised and multisensory resources. Tan et al. (2017) found that student teachers working in a rural Sabah primary-school context used visual and multimedia resources to connect English learning with the outside world and adapted materials according to students' proficiency levels. This principle can be extended beyond English to reading and writing activities generally. At SK Keramuak, locally familiar people, places, occupations, cultural practices and environmental experiences can provide content for reading passages and writing tasks. Such contextualisation can reduce the distance between classroom literacy and students' everyday experiences.

The findings also indicate that literacy improvement requires differentiated intervention because students within the same rural classroom may demonstrate substantially different levels of reading and writing competence. Lee et al. (2025) specifically identified targeted literacy strategies as important for rural Sabah students, while Lee and Wong (2020) demonstrated the need for instructional practices responsive to learners' proficiency. Therefore, teachers at SK Keramuak may need to combine whole-class instruction with small-group support, guided reading, phonics-related activities, vocabulary development, repeated reading and contextual writing. Such differentiation can also support socio-emotional development because achievable literacy tasks may increase students' confidence, persistence and willingness to participate.

Teacher Strategies and Local-Based Innovation

The findings show that teacher creativity is an important strategy for overcoming rural educational constraints. Perman (2021) identified local-based innovation and teachers' commitment as important responses to challenges

in a remote Sabah school. Mansor et al. (2022) similarly found that leaders of Malaysian small schools responded to financial, infrastructural and human-resource limitations through creativity, alternative resource generation, professional learning and instructional leadership. In the context of SK Keramuak, this suggests that effective integration does not necessarily depend on sophisticated programmes. Teachers can combine existing classroom materials, locally available resources, peer support and simple reflective routines to create integrated learning opportunities.

The findings also highlight the potential contribution of technology where appropriate infrastructure is available. Tan et al. (2017) found that ICT-supported and multisensory approaches helped rural primary learners engage with English through visual materials and interactive activities. However, technology should function as a supporting resource rather than become a prerequisite for successful integration. Ag-Ahmad and Lidadun (2020) emphasised the influence of the rural teaching environment on instructional practices, while Mansor et al. (2022) demonstrated that small schools often require alternative approaches because of resource limitations. Accordingly, low-technology strategies such as picture cards, locally produced texts, storytelling, peer reading and reflective worksheets remain valuable.

The findings further suggest that teacher collaboration and professional development can strengthen integrated practices. Rural teachers frequently have to manage multiple responsibilities, making shared planning and resource development particularly useful. Ab Aziz et al. (2019) showed that teachers working in rural Sabah develop coping strategies to persist despite professional and contextual pressures, while Ab Aziz et al. (2021) highlighted issues affecting teacher longevity in rural schools. These findings imply that sustained integration of self-reflection, socio-emotional learning and literacy should not depend solely on individual teacher effort. School-level collaboration, mentoring, shared materials and supportive leadership can help make integrated practices more consistent and sustainable.

Integrated Approach to Holistic Student Development

The findings ultimately suggest that self-reflection, socio-emotional development and literacy should be understood as mutually reinforcing rather than separate educational objectives. Literacy provides students with tools for communicating thoughts and experiences; socio-emotional learning supports confidence, relationships and responsible participation; and self-reflection enables students to evaluate their learning and identify areas for improvement. Durlak et al. (2011) established that SEL can contribute to both social-emotional and academic outcomes, while Cipriano et al. (2023) provided more contemporary evidence across a very large international evidence base. The integration of these domains therefore has a strong theoretical and empirical basis.

An integrated classroom approach may begin with a literacy stimulus, continue through collaborative socio-emotional interaction and conclude with structured reflection. For instance, students may read a locally relevant story, discuss the characters' feelings and decisions, work collaboratively to identify the central message, and then complete a short reflection about what they learned. Such an approach is consistent with the evidence supporting SEL and metacognitive development (Cipriano et al., 2023; Eberhart et al., 2025; Gascoine et al., 2017). It also corresponds with rural Sabah research emphasising contextualised and student-centred learning (Lee et al., 2025; Tan et al., 2017).

Overall, the literature-based findings indicate that successful integration at SK Keramuak depends more on contextual responsiveness than on adopting a standardised programme. The evidence from rural Sabah repeatedly points towards teacher adaptability, local innovation, differentiated instruction, contextualised resources and community relevance (Ag-Ahmad & Lidadun, 2020; Perman, 2021; Lee et al., 2025). At the same time, international evidence indicates that SEL and metacognitive approaches can support broader student outcomes when implementation is appropriate and well structured (Cipriano et al., 2023; Wigelsworth et al., 2022). The case therefore demonstrates the value of a holistic model in which literacy, socio-emotional learning and self-reflection are embedded naturally within everyday classroom practices rather than implemented as isolated programmes.

Artificial Intelligence as a Learning Assistant for Self-Reflection

The findings suggest that artificial intelligence (AI) can potentially strengthen self-reflection when it is used as

a learning assistant rather than as a replacement for teacher guidance. Lee (2026) found that AI-supported learning can provide personalised assistance, timely feedback and opportunities for active learner participation, while also supporting learner autonomy. In the context of SK Keramuak, similar principles could be applied through carefully designed reflective prompts that encourage pupils to explain what they have learned, identify difficulties and consider how they can improve. However, because the present study focuses on a rural primary-school context, AI use should remain developmentally appropriate and dependent on available digital infrastructure.

AI may also provide opportunities to differentiate literacy activities according to individual learning needs. Lee (2026) reported that AI learning assistants can support personalised learning and flexible learner engagement, suggesting that technology may complement differentiated instruction. This is relevant to SK Keramuak because rural classrooms may contain students with different levels of reading, writing and language proficiency. Instead of providing identical literacy tasks to all pupils, technology-supported activities could potentially offer additional explanations, vocabulary support or feedback. Nevertheless, such applications should be teacher-directed because Lee (2026) also identified digital readiness, ethical concerns and possible overreliance as challenges associated with AI-supported learning.

The findings therefore support a cautious, student-centred approach to AI integration. AI should function as an additional learning resource that encourages pupils to think, reflect, communicate and revise their work rather than simply producing answers for them. This principle is consistent with Lee's (2026) finding that AI is most beneficial when thoughtfully incorporated into instructional design. It also complements earlier evidence on supportive, linear and collaborative learning reported by Lee et al. (2016), where learning environments can be designed to provide both individual support and interaction with others. For SK Keramuak, the teacher should remain the primary facilitator, while AI, where feasible, can provide supplementary support for literacy and reflective learning.

Student-Centred and Collaborative Learning

The findings indicate that student-centred learning can provide an effective framework for connecting literacy with socio-emotional development and self-reflection. Lee et al. (2016) distinguished between linear learning and collaborative learning, highlighting the importance of supportive learning environments in which students can engage with learning resources and interact with others. Similarly, Lee (2026) found that student-centred AI-supported learning can encourage active participation and learner autonomy. Applied to SK Keramuak, these principles suggest that pupils should be given opportunities to discuss texts, work with peers, express opinions and reflect on their learning rather than relying exclusively on teacher-directed instruction.

Collaborative literacy activities may also encourage students to develop communication and interpersonal skills alongside academic competencies. Siew et al. (2015) demonstrated the potential of problem-based learning to foster scientific creativity among fifth-grade students, illustrating how active and problem-oriented learning can move pupils beyond passive reception of information. Siew and Lee (2017) further demonstrated that scientific creativity can be systematically assessed among Malaysian fifth graders. Although these studies focus on science rather than literacy, their implications are relevant to the present case because open-ended questioning, problem solving and creative responses can encourage students to articulate ideas, consider alternative perspectives and reflect on their own thinking.

The findings further suggest that meaningful learning can be strengthened when classroom activities connect students with their immediate environment and the wider world. Shin et al. (2025) demonstrated this principle through learning activities about animals that were designed to develop children's understanding of the world and encourage global connections. For rural pupils, locally familiar themes can serve as starting points for broader literacy and socio-emotional learning. For example, stories about animals, community life, local occupations or the surrounding environment can become stimuli for reading, discussion, vocabulary development and reflection. Such an approach is consistent with the broader student-centred perspective in which learners' experiences become resources for constructing meaningful knowledge.

The findings further highlight the importance of digital leadership and organisational learning in sustaining teaching innovation, particularly when schools seek to integrate technology with student-centred pedagogical practices. Cheng et al. (2026) emphasised that effective digital leadership involves creating supportive organisational conditions, encouraging continuous professional learning, and aligning technological innovation with sustainable teaching practices. Although their study focuses on higher education, the principles are relevant to rural primary schools such as SK Keramuak, where successful integration of digital tools, AI-supported learning, literacy activities, self-reflection, and socio-emotional learning depends not only on teachers' individual skills but also on school-level leadership and support. Therefore, sustainable innovation requires school leaders to facilitate teacher collaboration, provide appropriate professional development, encourage responsible technology use, and ensure that digital initiatives remain aligned with students' actual learning needs.

CONCLUSION

The study concludes that integrating self-reflection, socio-emotional development and literacy at SK Keramuak, Tongod, requires a flexible and context-sensitive approach that responds to students' differing literacy abilities, socio-emotional needs and rural learning conditions. The literature indicates that rural schools face persistent constraints involving resources, infrastructure, teacher capacity and learning inequalities, but also demonstrates the potential of local innovation, contextualised literacy activities, collaborative learning, metacognitive scaffolding and socio-emotional practices. The integration of these domains can therefore support more holistic student development when teachers are provided with appropriate support, resources and opportunities for collaboration. The findings reinforce the importance of treating rural education as a context requiring locally responsive solutions rather than uniform interventions.

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