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IMPLEMENTATION OF THE PROBLEM-BASED LEARNING MODEL USING THE 'TASUKA' MEDIA TO IMPROVE ELEMENTARY STUDENTS' WRITING SKILLS

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Abstract

The low level of early writing skills among students requires teachers to employ instructional models and media that can effectively support the improvement of these abilities. One approach utilized in this study is the implementation of the Problem-Based Learning (PBL) model combined with the TASUKA (Taman Suku Baca) instructional media. This research employed a descriptive qualitative method, with data collected through interviews, observations, and documentation. Data analysis was conducted through the stages of data collection, data reduction, data display, and conclusion drawing. The research subjects consisted of 29 first-grade students and one Indonesian language teacher. The findings indicate that the application of the PBL model assisted by TASUKA media successfully enhanced the early writing skills of students at SDN 2 Jombang. This improvement is evident in students' ability to write various syllables (ka, ki, ku, ko as well as la, li, lu, le, lo) and combine them into words more accurately. The enhancement in writing ability is also reflected in the students' assignment scores, with an average score of 85, categorized as high. These results demonstrate that TASUKA can serve as an effective instructional tool within the PBL framework, particularly for lower-grade students who depend on concrete media to support their learning processes. Nevertheless, teachers are encouraged to continue innovating and developing instructional media to optimize their use in Indonesian language learning.

Keywords: *Problem-Based Learning (PBL); TASUKA Media; Early Writing Skills; Basic Literacy; Elementary School.*

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INTRODUCTION

Writing skills are essential for every individual as a foundation for learning scientific knowledge and developing personal character in the future. Writing is also considered as important as other skills. Research by Putri et al. proves that writing skills need to be trained from an early age, because throughout the learning process students will receive assignments from teachers that require writing skills to complete them.[1] Thus, it can be understood that when students have good writing skills, they are able to follow the learning process smoothly.[2] Without initial writing ability, students will face many difficulties in completing their academic tasks.[3]

Writing skills can be acquired in Indonesian language subjects. Writing is one of the four language skills that students must master.[4] These four skills include listening, reading, speaking, and writing.[5] All four are interconnected and receive balanced emphasis in Indonesian language teaching.[6] Therefore, it must be understood that language skills are not naturally acquired; instead, they require continuous practice and training within the Indonesian language subject.[7]

Although writing skills are essential and must be mastered from an early age, field conditions show that guiding students to master initial writing skills is not an easy task. In practice, teaching beginning writing to first-grade students is challenging. As a result, many first-grade students who struggle with writing also find it difficult to understand abstract materials delivered by the teacher.[8] This commonly occurs because first-grade students are still in the concrete operational stage of thinking.[9]

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[1] Fadilla Widiasari Putri et al., 'Penerapan Metode SAS untuk Meningkatkan Keterampilan Menulis Permulaan Siswa Kelas I Sekolah Dasar', *Jurnal Pendidikan Guru Sekolah Dasar (JPGSD)* 4, no. 1 (2019): 320–28, https://doi.org/10.17509/jpgsd.v4i1.20675.

[2] Ni Putu Sistya Aristhi and Ida Bagus Surya Manuaba, 'Model Experiential Learning Berbantuan Media Gambar Terhadap Keterampilan Menulis Puisi Siswa Sekolah Dasar', *Jurnal Mimbar Ilmu* 25, no. 3 (2020): 327–37.

[3] Yunita Sari et al., 'Pengaruh Metode Pembelajaran Struktural Analitik Sitentik Terhadap Kemampuan Menulis Permulaan Di Sekolah Dasar', *Jurnal Basicedu* 4, no. 4 (2020): 1125–33, https://doi.org/10.31004/basicedu.v4i4.515.

[4] Nila Martha Yehonala Situmorang, 'Meningkatkan Kemampuan Menulis Siswa melalui Teknik Guiding Questions', *Journal of Education Action Research* 2, no. 2 (2018): 165–71, https://doi.org/10.23887/jear.v2i2.12190.

[5] Rini Kurnia Natalita et al., 'Meningkatkan Keterampilan Menulis Tegak Bersambung dengan Menggunakan Metode Drill pada Siswa Kelas 1 SD', *Journal of Elementary Education* 2, no. 1 (2019): 18–25.

[6] Siti Halidjah, 'Evaluasi Keterampilan Berbicara Dalam Pembelajaran Bahasa Indonesia', *Jurnal Visi Ilmu Pendidikan* 2, no. 1 (2012): 259–68, https://doi.org/doi:10.26418/jvip.v2i1.367.

[7] Jamaluddin Nasution, 'Analisis Kesulitan Bahasa Indonesia Bagi Pemelajar di Samsifl Uzbekistan pada Empat Keterampilan Berbahasa', *MEDAN MAKNA: Jurnal Ilmu Kebahasaan dan Kesastraan* 17, no. 2 (2019): 111, https://doi.org/10.26499/mm.v17i2.2134.

[8] H. Mahmud, 'Upaya Meningkatakan Keterampilan Menulis dengan Teknik RCG (Reka Cerita Gambar) pada Siswa Kelas VI SDN Rengkak Kecamatan Kopang, Kabupaten Lombok Tengah Tahun Pelajaran 2017/2018', *JISIP (Jurnal Ilmu Sosial dan Pendidikan)* 1, no. 2 (2019), https://doi.org/10.58258/jisip.v1i2.178.

[9] Hasan Basri, 'Kemampuan Kognitif dalam Meningkatkan Efektivitas Pembelajaran Ilmu Sosial Bagi Siswa Sekolah Dasar', *Jurnal Penelitian Pendidikan* 18, no. 1 (2018): 1–9, https://doi.org/10.17509/jpp.v18i1.11054.

Additionally, first-grade students are just beginning to learn how to combine letters into syllables, form words, and eventually construct simple sentences.[10] Difficulties in beginning writing can affect students' reading ability, understanding of instructional directions, and ability to keep up with classroom learning. Meanwhile, teachers often rely on traditional methods such as providing examples on the board, which not all students can follow at the same pace. Moreover, the varying levels of students' early literacy abilities require teachers to design more adaptive, creative, and innovative learning media and models.[11]

In addressing the challenges of teaching initial writing skills, the Problem-Based Learning (PBL) model emerges as a highly recommended alternative. A learning model is a method of presenting educational material to help students achieve learning objectives optimally.[12] One learning model that teachers can use to improve students' skills is the Problem-Based Learning model. PBL is widely used to support learning strategies that emphasize students' active engagement and empowerment.[13]

PBL is considered relevant because it emphasizes student activity, encourages independent learning, and places students at the center of the learning process. According to Tan in Kanty Puspita Sari et al., the main characteristic of PBL is the use of real-world problems that students must analyze. Through these problems, students formulate questions, identify knowledge gaps, seek additional information, and report the results. This process opens opportunities for dialogue between students and teachers and fosters meaningful learning experiences.[14]

Furthermore, in implementing PBL, learning is conducted by providing problems, asking questions, and facilitating inquiry, enabling open dialogue between teachers and students.[15] The main principle of PBL is the use of real problems as a medium for students to develop knowledge, critical thinking, and problem-solving skills.[16] At the beginning of PBL activities, small groups of students analyze a problem, identify relevant

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[10] Vina Rohmatul Afifah, 'Analisis Kemampuan Membaca Permulaan Anak Usia Dini Terhadap Kesiapan Memasuki Sekolah Dasar di TK Muslimat NU 001 Ponorogo' (Thesis Undergraduate, IAIN Ponorogo, 2021), https://etheses.iainponorogo.ac.id/id/eprint/15568.

[11] Lalu Wahyudi Wirabhakti, 'Meningkatkan Keterampilan Menulis Teks Eksposisi dengan Model Picture and Picture berbasis Tri Hita Karana', *Jurnal Pendidikan Multikultural Indonesia* 4, no. 2 (2022): 83–93, https://doi.org/10.23887/jpmu.v4i2.45445.

[12] Hanafiah, *Konsep Strategi Pembelajaran* (PT Refika Aditama, 2018).

[13] Izzah Muyassaroh et al., 'Upaya Peningkatan Literasi Sains Mahasiswa Melalui Blended-Collaborative Problem Based Learning Berbasis Multiple Representatives', *Jurnal Cakrawala Pendas* 8, no. 3 (2022): 915–31, https://doi.org/10.31949/jcp.v8i3.2564.

[14] Kanty Puspita Sari et al., 'Peningkatan Minat Belajar IPA Materi Siklus Air Melalui Model Problem Based Learning pada Siswa Kelas V Sekolah Dasar', *Educatif Journal of Education Research* 4, no. 3 (2022): 248–53, https://doi.org/10.36654/educatif.v4i3.233.

[15] Atika Roudhotul Jannah et al., 'Keefektifan Model PBL Berbantu Media Audio-Visual Terhadap Hasil Belajar Tema Indahnya Keberagaman di Negeriku', *Mimbar PGSD Undiksha* 8, no. 3 (2020): 342–50, https://doi.org/10.23887/jjpgsd.v8i3.28951.

[16] Rina Febriana et al., 'Modul Geometri Ruang Berbasis Problem Based Learning Terhadap Kreativitas Pemecahan Masalah', *AKSIOMA: Jurnal Program Studi Pendidikan Matematika* 9, no. 1 (2020): 93, https://doi.org/10.24127/ajpm.v9i1.2591.

facts, and apply existing knowledge and experiences to solve it.[17] Thus, the core idea of PBL is that learning is student-centered, problem-focused, and carried out in small groups with the teacher acting as a facilitator.[18]

However, a learning model cannot reach maximum effectiveness without the support of appropriate learning media.[19] Tuange et al. explains that learning media serve as channels for messages that stimulate learning conditions. Attractive, relevant, and technologically aligned media strengthen learning interaction and facilitate student understanding.[20] From this definition, learning media can be understood as tools used to deliver information (learning material). The learning process will run effectively when media are selected appropriately and are adaptive to scientific, technological, and artistic developments. Therefore, selecting the right media is a crucial element in teaching beginning writing.[21]

Based on interviews with the Indonesian language teacher at SDN 2 Jombang, it was found that eight first-grade students still experience difficulties in beginning writing, particularly when writing various syllables without concrete examples from the teacher. These difficulties occur because the students have not fully recognized or memorized the alphabet, requiring the teacher to provide intensive assistance. To address these problems, the teacher used the PBL model combined with TASUKA media (Taman Suku Kata). TASUKA is designed as two rectangular boxes resembling a flower garden: one box contains a selection of initial syllables (la, li, lu, le, lo), while the other is left empty for placing the syllables chosen by the students. In practice, students select the appropriate syllable according to the instructions, then insert it into the empty garden space, helping them recognize and assemble syllables in a concrete way.

Theoretically, the Problem-Based Learning model is highly relevant for lower-grade students because it aligns with their cognitive developmental characteristics, which are still in the concrete operational stage according to Piaget.[22] At this stage, students learn most effectively through hands-on activities, concrete objects, and

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[17] Susan A. Seibert, 'Problem-Based Learning: A Strategy to Foster Generation Z's Critical Thinking and Perseverance', *Teaching and Learning in Nursing* 16, no. 1 (2021): 85–88, https://doi.org/10.1016/j.teln.2020.09.002.

[18] Ann-Louise Andersen and Carin Rösiö, 'Continuing Engineering Education (CEE) in Changeable and Reconfigurable Manufacturing Using Problem-Based Learning (PBL)', *Procedia CIRP* 104 (2021): 1035–40, https://doi.org/10.1016/j.procir.2021.11.174.

[19] Ni Made Ayu Primadewi and Gusti Ngurah Sastra Agustika, 'Video Animasi Berorientasi Problem-Based Learning Untuk Meningkatkan Motivasi Belajar Matematika Siswa Kelas IV SD', *Jurnal Edutech Undiksha* 10, no. 1 (2022): 167–77, https://doi.org/10.23887/jeu.v10i1.46477.

[20] Junita Sara V. B. Tuange et al., 'Penggunaan Podcast Dalam Pembelajaran Untuk Mendukung Gaya Belajar Siswa Di Jenjang Pendidikan Dasar Dan Menengah: Sebuah Kajian Literatur Sistematis', *Jurnal Pendidikan Dan Teknologi Indonesia (JPTI)* 5, no. 11 (2025): 3410–24, https://doi.org/10.52436/1.jpti.1096.

[21] Doni Tri Putra Yanto, 'Praktikalitas Media Pembelajaran Interaktif pada Proses Pembelajaran Rangkaian Listrik', *INVOTEK: Jurnal Inovasi Vokasional dan Teknologi* 19, no. 1 (2019): 75–82, https://doi.org/10.24036/invotek.v19i1.409.

[22] Kim E. Tosolini et al., 'A Piagetian Lens on Cognitive Development of Children and Youths with Congenital Deafblindness: A Scoping Review', *Frontiers in Education* 10 (April 2025): 1479668, https://doi.org/10.3389/feduc.2025.1479668.

manipulative experiences that allow them to construct concepts through real interaction.[23] PBL provides such a learning environment by encouraging students to observe simple problems, ask questions, try alternative solutions, and engage in discussion within small groups.[24] In language learning, PBL has been shown to promote active engagement, strengthen understanding of linguistic concepts, and enhance language skills through problem-solving processes.

With the support of manipulative media such as TASUKA, the steps of PBL become even more aligned with the developmental needs of first-grade students. Concrete media allow students to hold, choose, and arrange syllables physically, making the process of discovering language patterns easier and more meaningful. According to Vygotsky's theory of scaffolding, concrete media serve as tools that bridge the gap between students' actual and potential abilities. Therefore, integrating PBL with TASUKA media pedagogically provides learning experiences that align with the cognitive and linguistic needs of young learners. Based on this foundation, this study precisely formulates two main questions: [1] How is the implementation of the PBL syntax assisted by TASUKA media in teaching beginning writing to first-grade students at SDN 2 Jombang? [2] What challenges do teachers and students face during the learning process?

RESEARCH GAP ANALYSIS

Previous studies have demonstrated the effectiveness of the Problem-Based Learning (PBL) model in improving students' writing skills. Kartika et al. found that PBL supported by series-picture media successfully enhanced the simple writing abilities of third-grade elementary students.[25] Other studies have similarly shown that PBL combined with series-picture media improves students' explanatory writing skills.[26] Priani also reported that PBL assisted by series-picture media had a positive effect on students' procedural text writing skills.[27] Maryati et al. concluded that the implementation of PBL in teaching pantun writing using kasamsi media improved

[23] Milorad Cerovac and Therese Keane, 'Early Insights into Piaget's Cognitive Development Model through the Lens of the Technologies Curriculum', *International Journal of Technology and Design Education* 35, no. 1 (2025): 61–81, https://doi.org/10.1007/s10798-024-09906-5.

[24] Tania Stoltz et al., 'Consciousness and Education: Contributions by Piaget, Vygotsky and Steiner', *Frontiers in Psychology* 15 (August 2024): 1411415, https://doi.org/10.3389/fpsyg.2024.1411415.

[25] Narti Kartika et al., 'Pembelajaran Keterampilan Menulis Karangan Sederhana Siswa Kelas 3 Sekolah Dasar Menggunakan Model Problem Based Learning dengan Berbantuan Media Gambar Seri', *COLLASE (Creative of Learning Students Elementary Education)* 5, no. 2 (2022): 275–82, https://doi.org/10.22460/collase.v5i2.5890.

[26] Amirah Hizati et al., 'Pengaruh Model Problem Based Learning Berbantuan Media Gambar Berseri Terhadap Keterampilan Menulis Teks Eksplanasi Siswa Kelas VIII SMP Negeri 12 Padang', *Jurnal Pendidikan Bahasa dan Sastra Indonesia* 1, no. 7 (2018): 183–90, https://doi.org/10.31227/osf.io/mh6e3.

[27] Rice Priani et al., 'Pengaruh Penggunaan Model Problem Based Learning melalui Media Gambar Berseri terhadap Keterampilan Menulis Teks Prosedur', *Jurnal Pembelajaran Bahasa dan Sastra* 1, no. 6 (2022): 711–20, https://doi.org/10.55909/jpbs.v1i6.203.

students' writing performance.[28] Marini et al. found a significant influence of PBL supported by diorama media on students' writing abilities.[29]

These studies have contributed valuable insights into instructional models, learning media, and writing skills in elementary education. Sari et al. examined the application of problem-solving approaches in Indonesian language learning and concluded that problem-based methods effectively increased students' engagement and comprehension.[30] Although the study did not focus specifically on early writing skills, its findings indicate that problem-oriented learning models hold strong potential for enhancing language development, including writing skills that require structured thinking processes.

However, most of these studies employed static visual media such as series pictures, kasamsi, and dioramas. While these media are effective for students who have mastered basic reading, they do not specifically target the needs of first-grade learners who are still at the stage of recognizing and forming syllables. Thus, the primary limitation in previous research lies in the lack of concrete, manipulable media that can support first-grade students in understanding syllable structures as the foundational component of early writing skills.

Other research focusing on improving writing skills was conducted by Subianto et al., who used the Picture and Picture model supported by series-picture media to enhance students' expository writing. Their findings indicate that visual media significantly help students organize ideas into written form. This supports the argument that concrete media are essential in writing instruction, particularly at early stages when learners rely heavily on visual and tangible representations to facilitate their cognitive processing.[31]

Research addressing early writing skills in first-grade classrooms is reflected in studies using the SAS method (Structural–Analytic–Synthetic) to develop beginning writing abilities. The findings emphasize that improving writing skills in lower-grade students requires systematic, gradual methods that align with their cognitive development. First-grade students remain in Piaget's concrete operational stage,

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[28] Maryati et al., 'Penerapan Problem Based Learning (PBL) Berbantuan Media Kasamsi Dalam Pembelajaran Menulis Pantun Di SD', *Jurnal Pendidikan Dan Konseling* 4 (2022): 8029.

[29] Sera Marini et al., 'Pengaruh Model Problem Based Learning Berbantuan Media Diorama Terhadap Keterampilan Menulis Teks Diskusi Siswa Kelas VIII Mts Negeri Muara Bungo', *Jurnal Pendidikan Bahasa Dan Sastra Indonesia UNP* 6, no. 2 (2017): 312–20, https://doi.org/10.24036/8655-019883.

[30] Risa ElvinaAyu Indah Sari et al., 'Peningkatan Keterampilan Pemecahan Masalah Siswamelalui Pembelajaran Collaborative Problem Solving Berbantuan Media PHET', *Jurnal Natural Science Educational Research* 5, no. 2 (2022): 66–75, https://doi.org/10.21107/nser.v5i2.16671.

[31] Subianto et al., 'Penggunaan Media Gambar dalam Meningkatkan Kemampuan Menulis Teks Eksposisi', *Didaktika: Jurnal Kependidikan* 13, no. 4 (2024): 4531–44, https://doi.org/10.58230/27454312.1276.

necessitating the use of real, manipulable teaching aids to help them understand syllables, phonemes, and the relationship between letters and sounds.[32]

Studies on the application of PBL in non-language contexts also provide relevant insights. Khoiriyah and Nurmilah showed that PBL improves mathematical literacy and higher-order thinking skills. Although situated within the field of mathematics, the findings reaffirm the cross-disciplinary effectiveness of PBL due to its emphasis on analysis, collaboration, and problem solving.[33] These principles align with the needs of Indonesian language learning, including writing, which fundamentally involves problem solving: selecting appropriate words, constructing structure, and communicating ideas.

Based on the literature review above, a significant research gap emerges: no studies have examined the use of TASUKA (Taman Suku Kata) media in PBL-based early writing instruction. While previous research has focused largely on passive visual media, this study introduces a new approach using syllable-based manipulable media specifically designed for beginning writers. In the context of PBL, this research extends current understanding by exploring how the model can be implemented for early-grade learners who still require concrete visual support.

TASUKA is a manipulable learning medium designed as a "syllable garden," where students can select, move, and place syllable cards in accordance with teacher instructions. Its characteristics align with the developmental needs of early-grade students in the concrete operational stage, enabling them to visualize and construct syllables physically. Unlike previously studied picture-based media, TASUKA emphasizes hands-on manipulation, making it more relevant to the development of early literacy skills. The absence of studies integrating PBL with TASUKA in early writing instruction constitutes a critical research gap that this study seeks to address in order to enrich Indonesian language teaching strategies in early-grade classrooms.

THEORETICAL FRAMEWORK

Writing is the process of expressing ideas, thoughts, or feelings in the form of structured written linguistic symbols.[34] In educational contexts, writing is one of the four essential language skills that students must master and serves as the foundation of their academic literacy. This skill involves not only the mechanics of writing (such as spelling and grammar) but also critical thinking and the ability to construct arguments.

Beginning writing instruction for first-grade elementary students represents a fundamental phase in literacy development, as students at this stage begin to recognize letter forms, understand phonemes, combine syllables, and produce simple words and

[32] Nur Azizah et al., 'Analisis Kemampuan Menulis Permulaan Kelas 1 SD di Komplek Unand Blok D', *PUSTAKA: Jurnal Bahasa dan Pendidikan* 4, no. 3 (2024): 144–55, https://doi.org/10.56910/pustaka.v4i3.1473.

[33] Lailatul Khoiriyah and Rifa Nurmilah, 'Penerapan Model Pembelajaran Problem Based Learning Terhadap Kemampuan Literasi Matematis Siswa', *Prosiding Seminar Nasional Pendidikan Matematika, Universitas Mulawarman* 4 (2024): 11–16.

[34] 'Depdiknas', 2003.

sentences. However, this process often encounters challenges due to the cognitive characteristics of lower-grade students, who are at Piaget's concrete operational stage.[35] At this developmental level, children are not yet capable of abstract thinking and require stimulation through tangible objects, manipulatives, and direct experiences to grasp concepts meaningfully.[36] Accordingly, early writing instruction demands an approach that does not rely solely on verbal explanations but provides concrete tools and problem-centered learning situations that encourage exploration and active knowledge construction.

In this context, the PBL model becomes highly relevant. PBL positions "problems" as the starting point of instruction, encouraging students to investigate, collaborate, and construct understanding.[37] In the teaching of Indonesian language, PBL is effective in enhancing students' cognitive engagement because it trains them to identify information, explore alternative solutions, and communicate their findings, both orally and in written form.[38] However, when PBL is applied to first-grade students without the support of concrete media, the cognitive processes required for problem solving become difficult to achieve, as their symbolic representation abilities are still limited.

At this stage, the TASUKA media plays a strategic role. TASUKA provides a manipulable tool consisting of syllable cards that students can move, arrange, separate, and reconstruct. Its use aligns with the principle of educational media that transforms abstract concepts into concrete and comprehensible forms, particularly essential in beginning writing, which demands the integration of phonological skills, fine motor ability, and word-structure understanding.[39] Thus, TASUKA bridges the gap between the cognitive demands of PBL—which emphasizes analytical thinking—and the developmental needs of young learners who still rely heavily on concrete objects.

The integration of PBL and TASUKA creates a complementary instructional mechanism. PBL provides the problem context, while TASUKA offers concrete tools for solving those problems. For example, teachers may pose questions such as, "Why can't the word you arranged be read correctly?" or "How can you form a new word from the syllables available?" Using TASUKA, students can manipulate syllables to explore multiple possible solutions. This exploratory process aligns with Piaget's constructivist

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[35] Stoltz et al., 'Consciousness and Education'.

[36] Wina Mustikaati et al., 'Analisis Tahapan Perkembangan Anak dalam Mengoptimalkan Potensi Diri Pada Usia 2-6 Tahun', *Madani: Jurnal Ilmiah Multidisiplin* 3, no. 4 (2025): 180–86, https://doi.org/10.5281/zenodo.15425397.

[37] Eka Anisa Aprina et al., 'Penerapan Model Problem Based Learning untuk Mengembangkan Keterampilan Berpikir Kritis Pada Muatan IPA Sekolah Dasar', *Didaktika: Jurnal Kependidikan* 13, no. 1 (2024): 981–90, https://doi.org/10.58230/27454312.496.

[38] Isna Hany Nizam Kholilah et al., 'Model Problem Based Learning untuk Peningkatan Motivasi dan Hasil Belajar Bahasa Indonesia Siswa Sekolah Dasar: Systematic Literature Review', *Didaktika: Jurnal Kependidikan* 14, no. 3 (2025): 5037–50, https://doi.org/10.58230/27454312.2455.

[39] Retno Nuzilatus Shoimah, 'Penggunaan Media Pembelajaran Konkrit untuk Meningkatkan Aktifitas Belajar dan Pemahaman Konsep Pecahan Mata Pelajaran Matematika Siswa Kelas III MI Ma'arif NU Sukodadi-Lamongan', *MIDA: Jurnal Pendidikan Dasar Islam* 3, no. 1 (2020): 1–18, https://doi.org/10.52166/mida.v3i1.1836.

principle that children build knowledge through direct interaction with objects.[40] When students assemble syllables into words, they are not merely copying; rather, they are thinking, experimenting, matching sounds with letters, and correcting errors based on visual feedback.[41]

Through this integration, beginning writing instruction is no longer understood as a reproductive activity (copying), but as a constructive process involving foundational cognitive operations, problem-solving strategies, and the manipulation of concrete objects that align with the cognitive development of lower-grade elementary students.

RESEARCH METHOD

This study employed a descriptive qualitative method to explore and understand the meanings ascribed by individuals or groups to social or educational phenomena. The qualitative research process involved key activities such as formulating guiding questions and procedures, collecting participant-specific data, analyzing the data, and interpreting the findings.[42] This method was deemed appropriate because the study aimed to describe the implementation of the PBL model supported by the TASUKA instructional media in Indonesian language lessons to improve writing skills among first-grade students at SDN 2 Jombang. A case study approach was used to examine the instructional process in depth. The study was conducted at SDN 2 Jombang with 25 first-grade students during the even semester in March 2023.

Data were collected through observation, interviews, and documentation. Due to field constraints, observations were conducted remotely via a 30-minute WhatsApp video call. This procedure enabled the researcher to observe the learning process in real time, including teacher and student interactions, the use of TASUKA media, and the implementation of PBL syntax. The use of video call–based observations has become common in contemporary educational research, as it provides authentic classroom insights when researchers face geographical limitations or are not permitted to conduct face-to-face observation. Interviews were also conducted through WhatsApp.

The interview involved the first-grade Indonesian language teacher (P1) for 30 minutes and two first-grade students to ensure triangulation of information. The phone-interview format was chosen to maintain participant comfort, facilitate access, and adapt to contextual limitations. The interviews were intended to obtain in-depth information regarding the implementation of PBL assisted by TASUKA and the challenges experienced by both teacher and students. Documentation—consisting of

[40] Tosolini et al., 'A Piagetian Lens on Cognitive Development of Children and Youths with Congenital Deafblindness'.

[41] Kholilah et al., 'Model Problem Based Learning untuk Peningkatan Motivasi dan Hasil Belajar Bahasa Indonesia Siswa Sekolah Dasar: Systematic Literature Review'.

[42] John W Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 4th edn, vol. 2 (SAGE Publication, 2014).

photographs of the teacher during instruction—was collected to support observational and interview data and to enhance data validity.

The research instruments focused on two main questions: [1] How is the PBL instructional syntax implemented using TASUKA to enhance students' writing skills? and [2] What challenges arise during the implementation of PBL with TASUKA media? These data collection techniques were employed to obtain field data that aligned with the research focus. The collected data were then processed and analyzed. Data analysis followed the Miles and Huberman model, consisting of three cyclical and iterative stages: data reduction, data display, and conclusion drawing/verification.

First Stage: Data Reduction. Data reduction began during data collection through WhatsApp video-call observations and phone interviews. At this stage, the researcher selected, focused, simplified, and organized raw data into more meaningful categories aligned with the research objectives. *Second Stage:* Data Display. Reduced data were then presented in the form of narrative descriptions, tables, and interview excerpts. *Third Stage:* Conclusion Drawing and Verification. Preliminary conclusions were developed based on emerging patterns, trends, and relationships observed in the data display. These conclusions were continuously verified to ensure accuracy and scientific accountability.[43] This process ultimately enabled the study to obtain specific and reliable data regarding the implementation of the PBL model supported by TASUKA media at SDN 2 Jombang.

RESULTS AND DISCUSSION

The findings indicate that the teacher did not immediately implement the full PBL syntax; instead, the lesson began with introductory activities on early writing skills using pictures, real objects, and copying exercises for syllables. The teacher argued that first-grade students require foundational understanding before being presented with a problem to solve. Pedagogically, this approach is not a weakness but an essential modification of PBL to align with the cognitive characteristics of young learners. According to Piaget, children aged 6–7 are in the concrete operational stage, meaning that they construct knowledge more effectively when learning is mediated through direct, tangible experiences rather than abstract representations.[44] This suggests that the teacher's initial scaffolding served two purposes: [1] activating students' prior knowledge to prevent cognitive overload, and [2] providing concrete contexts that help learners understand syllable structures before engaging with a "problem."

The theory of PBL does not demand rigid implementation. Barrows emphasizes that PBL must be adapted to learners' developmental levels.[45] Therefore, the provision

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[43] Matthew B Miles et al., *Qualitative Data Analysis: A Methods Sourcebook*, 3rd edn (Sage publications, 2014).

[44] Tosolini et al., 'A Piagetian Lens on Cognitive Development of Children and Youths with Congenital Deafblindness'.

[45] H. S. Barrows, 'A Taxonomy of Problem-based Learning Methods', *Medical Education* 20, no. 6 (1986): 481–86, https://doi.org/10.1111/j.1365-2923.1986.tb01386.x.

of preliminary material is not a deviation but a legitimate pedagogical step to prepare first-grade students for problem-solving activities. These findings highlight that PBL implementation in lower grade levels requires recontextualization. Teachers cannot impose the abstract, inquiry-driven nature of PBL on students who are still operating at a concrete developmental stage. This contributes theoretically to the idea that PBL for early literacy must be supported by manipulative media and reinforced conceptual preparation prior to problem orientation.

The use of TASUKA emerged as a central component in students' knowledge construction. This medium served not only as a visual aid but also integrated kinesthetic learning through motor activities such as selecting and attaching syllable cards to the board. This combination of play and learning is highly compatible with the developmental characteristics of 6–7-year-old learners in Piaget's concrete operational stage. The teacher stated that TASUKA helped reinforce students' understanding of syllable patterns such as ka–ki–ku–ke–ko and la–li–lu–le–lo. Observations further showed that students were able to assemble syllables into meaningful words—such as le-ma-ri—more accurately when they manipulated syllable components directly. This confirms that concrete media can enhance attention, stimulate learning motivation, and foster more meaningful learning experiences.

Integrating TASUKA into the PBL syntax enriched the pedagogical dynamics of the lesson. The problem-orientation phase was implemented not only through visual stimuli but also through problem situations grounded in students' real-life experiences. At this stage, students were asked to observe pictures of familiar objects around the school, write the corresponding syllables, and complete missing syllables. This aligns with Barrows' principle that PBL problems must be authentic and cognitively challenging to stimulate inquiry.[46] Teacher P1's explanation that students must first understand the problem before attempting solutions reflects adherence to the initial PBL principle of facilitating contextual problem comprehension. Previous studies also indicate that early orientation enhances students' mental readiness to participate in collaborative problem-solving.

Figure 1.
TASUKA Manipulative Media

[46] Barrows, 'A Taxonomy of Problem-based Learning Methods'.

During the student organization stage, the teacher was observed grouping students based on balanced ability levels to optimize the discussion process. This practice reflects the application of heterogeneous grouping, which An and Zhang argues can enhance positive peer interaction because students are encouraged to support one another within the group. The teacher provided opportunities for students to discuss solutions to the previously presented problem.[47] Based on the interview, the teacher emphasized that this grouping strategy is essential to ensure full participation, particularly in lower-grade classrooms where students still require guidance in developing social interaction skills. This finding aligns with Tabun et al., who assert that group organization within PBL should be directed toward role distribution and collaboration to ensure effective problem-solving.

In the subsequent group investigation stage, students used the TASUKA media as an exploratory tool. They gathered information by manipulating syllables directly to discover answers to the task assigned by the teacher. Such investigative activity represents the core of PBL, namely, student inquiry grounded in hands-on experience rather than passive reception of information. The teacher acted as a facilitator, offering prompts and guiding questions. This approach is consistent with Saputro and Rahayu, who explain that investigation in PBL may involve field experiences or small-scale experiments relevant to learning objectives.[48] At this phase, TASUKA strengthened the inquiry process by enabling students to test various syllable combinations before arriving at the correct conclusions.

The process of developing and presenting group results demonstrated the emergence of student agency, or students' capacity to articulate their own thinking. Group presentations served as important moments for building confidence, practicing communication skills, and developing basic argumentative abilities. At this stage, the teacher functioned as a facilitator ensuring that the class discussion remained dialogical. Other students responded to the presenting group, creating a more dynamic classroom environment. This finding is consistent with Saetbyul et al., who argue that teachers in PBL must minimize verbal dominance so that students can construct knowledge through social interaction and collective reflection.[49]

The final stage, analysis and evaluation, showed that the teacher encouraged students to reflect on the learning process they had undertaken. Evaluation focused not only on the final product—such as the correctness of answers—but also on the quality

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[47] Shuowen An and Si Zhang, 'Effects of Ability Grouping on Students' Collaborative Problem Solving Patterns: Evidence from Lag Sequence Analysis and Epistemic Network Analysis', *Thinking Skills and Creativity* 51 (2024): 101453, https://doi.org/10.1016/j.tsc.2023.101453.

[48] Okta Aji Saputro and Theresia Sri Rayahu, 'Perbedaan Pengaruh Penerapan Model Pembelajaran Project Based Learning (PJBL) dan Problem Based Learning (PBL) Berbantuan Media Monopoli Terhadap Kemampuan Berpikir Kritis', *Jurnal Imiah Pendidikan dan Pembelajara*, 185-193, vol. 4, no. 1 (2020), https://doi.org/10.23887/jipp.v4i1.24719.

[49] Saetbyul Kim et al., 'Influence of Teachers' Grouping Strategies on Children's Peer Social Experiences in Early Elementary Classrooms.', *Frontiers in Psychology* (Switzerland) 11 (2020): 587170, https://doi.org/10.3389/fpsyg.2020.587170.

of group discussions and the accuracy with which TASUKA was used to solve problems. The teacher provided additional explanations to groups that made errors to reinforce their understanding. This reflective approach aligns with the principle of formative evaluation in PBL, which emphasizes assessing the extent to which students internalize learning experiences and apply them in new contexts. Ismayanti et al. support this view, noting that end-of-lesson reflection is necessary to assess the development of students' thinking skills and the effectiveness of instructional strategies.[50]

After completing these stages, the students' task scores were obtained, as presented in the following table:

Table 1.
Students' Assignment Scores

Category	Baseline Condition	After PBL + TASUKA	Remarks
Number of Students Meeting Mastery Criteria	21 students (72%)	26 students (90%)	An 18% increase in mastery level
Number of Students Not Meeting Mastery Criteria	8 students (28%)	3 students (10%)	An 18% decrease in non-mastery cases
Class Average Score	74	85	Increased by 11 points after the intervention
Highest Score	95	100	Student achievement reached the maximum score
Lowest Score	50	66	Minimum performance improved by 16 points

The results presented in Table 1 confirm that the integration of PBL and the TASUKA media produced measurable learning gains among first-grade students. Mastery levels rose from 72% to 90%, indicating a substantial improvement attributable to the intervention. The increase in the class average—from 74 to 85—suggests that the benefits were distributed across students rather than concentrated within a small subset. Notably, the rise in the lowest score (from 50 to 66) provides strong evidence that the intervention effectively supported lower-performing students, thereby enhancing the overall equity of learning outcomes.

These findings reinforce the pedagogical value of combining PBL with concrete, manipulable media for early literacy instruction. Beyond improving syllable construction skills, the approach stimulated critical thinking, collaborative problem-solving, and active engagement—key competencies highlighted in constructivist learning theory. The students' direct manipulation of syllables through TASUKA enabled them to construct knowledge meaningfully, consistent with previous studies demonstrating the effectiveness of hands-on media in early childhood literacy.

[50] Ismayanti Ismayanti et al., 'Penerapan Strategi Refleksi pada Akhir Pembelajaran untuk Meningkatkan Keterampilan Berpikir Kreatif Peserta Didik pada Materi Fluida', *Karst: Jurnal Pendidikan Fisika dan Terapannya* 3, no. 1 (2020): 27–31, https://doi.org/10.46918/karst.v3i1.573.

Overall, the analysis underscores that adapting PBL with developmentally appropriate learning tools can substantially enhance both the process and outcomes of early literacy learning. This study contributes empirical evidence supporting the contextualization of PBL for lower-grade learners, particularly when combined with concrete media that align with their cognitive developmental stage.

Figure 2.
Application of the TASUKA Instructional Media

Although the implementation of the PBL model supported by the TASUKA media has demonstrated its effectiveness in improving students' writing skills, the process was not without challenges that affected the optimal execution of the learning activities. These challenges emerged from pedagogical, technical, and learner-related factors, particularly considering that lower-grade students still require intensive guidance. Additional obstacles were observed in the teacher's adaptation to the PBL syntax, the consistent use of manipulative media, and the limited instructional time available. Therefore, identifying and analyzing these challenges is essential to understand the factors that constrain the successful implementation of PBL with the TASUKA media, as well as to provide a foundation for improving future instructional practices.

Learning Barriers Among Early-Grade Students

Initial observations revealed that eight students experienced difficulties in early writing skills. When the PBL model was implemented, students were required to work collaboratively to analyze the problem, identify relevant information, and use their prior knowledge to construct an appropriate solution. However, several learning barriers typically found in early-grade learners emerged during the process. First, low self-confidence prevented some students from engaging directly with the TASUKA media, which hindered their ability to complete the assigned tasks. This issue was confirmed by Teacher P1, who stated:

> "Some students were quiet and unwilling to try using the TASUKA media directly; they only observed their peers."

This finding aligns with Innestasia et al., who emphasize that PBL requires active participation because the problems presented are open-ended and unstructured. Sehingga perlu partisipasi aktif dari siswa.[51]

Second, students who demonstrated quiet or passive behavior tended to contribute minimally during group discussions. Teacher P1 noted:

> "There were three students who were less active and lacked confidence in expressing their ideas during group discussions."

This observation supports the argument of Mulyadi and Nani, who assert that teachers must cultivate students' intrinsic motivation by providing stimulating and relevant problems, enabling them to engage in analysis, construct new knowledge, and develop independent problem-solving strategies.[52]

Teacher Challenges

Based on interviews with the classroom teacher (Ms. P1), several challenges emerged in implementing the PBL model assisted by the TASUKA media in Indonesian language instruction for early-grade students. The first challenge relates to the planning stage, in which the teacher requires additional time to design engaging learning media and to select contextual problems that align with the learning objectives. This finding is consistent with Triskawati and Beta, who assert that developing instructional media demands creativity and extra time outside teaching hours to ensure that the prepared materials are relevant and effective for classroom use.[53] As expressed by Ms. P1 during the interview:

> "In planning, I need extra time to design the learning media and select the problems to be discussed. So at the beginning, students may need to be given a stimulus or guided a little."

The second challenge arises during the implementation stage, particularly in organizing students into discussion groups. Because the students are still in Grade 1, the teacher faces difficulties in managing classroom dynamics and ensuring balanced group composition. Only around 30–50% of the students demonstrate strong abilities, requiring the teacher to divide groups strategically so that each group can function optimally. This situation aligns with findings by Mulyadi and Nani, who explain that an imbalanced teacher–student ratio makes it challenging for teachers to manage the class and monitor the learning process comprehensively.[54] As stated by Ms. P1:

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[51] Innestasia Hastawan et al., 'Penerapan Model Problem Based Learning (PBL) untuk Meningkatkan Kemampuan Berpikir Kritis dan Kreatif', *Kalam Cendekia: Jurnal Ilmiah Kependidikan* 11, no. 3 (2023): 988–96, https://doi.org/10.20961/jkc.v11i3.73498.

[52] Krise Mulyadi and Nani Ratnaningsih, 'Analisis Pencapaian dan Kendala Penerapan Problem Based Learning Pada Pembelajaran Tatap Muka Terbatas (PTMT)', *J-KIP (Jurnal Keguruan Dan Ilmu Pendidikan)* 3, no. 1 (2022): 37–46, https://dx.doi.org/10.25157/j-kip.v3i1.7023.

[53] Triskawati and Beta Rapita Silalahi, 'Pengembangan Media Dokansi Sebagai Media Pembelajaran Bahasa Indonesia Materi Pantun Kelas IV SD', *EduGlobal: Jurnal Penelitian Pendidikan* 1, no. 1 (n.d.): 55–67.

[54] Mulyadi and Ratnaningsih, 'Analisis Pencapaian Dan Kendala Penerapan Problem Based Learning Pada Pembelajaran Tatap Muka Terbatas (PTMT)'.

> "Because they are first graders, it's a bit difficult to control the children when forming groups. Only about 30–50% of the students have good abilities, so I have to mix them fairly to make the groups balanced."

The third challenge involves supervising students during group discussions. With 29 students in a single class, the teacher's mobility to observe each student becomes limited. Consequently, assessments of student participation and performance during discussions may become less objective. This finding is reinforced by Baiq, who emphasizes the importance of equal teacher supervision so that attention is not focused on only certain groups and evaluations remain accurate.[55] As noted by Ms. P1:

> "The challenge is the large number of students in one class, so I cannot observe each student individually during the discussion activities."

Collectively, these challenges illustrate that the effectiveness of implementing PBL with TASUKA media depends not only on the quality of the model and media but also on the teacher's readiness to manage classroom dynamics, design instructional tools, and conduct thorough monitoring. Difficulties encountered in the planning, implementation, and evaluation stages highlight the need for more systematic support in applying PBL in early-grade classrooms, including pedagogical training, dedicated time for media development, and more proportional teacher–student ratios. By understanding these challenges comprehensively, schools and educational stakeholders can develop more appropriate strategies to optimize PBL implementation and ensure that Indonesian language learning becomes more effective and responsive to students' actual needs.

CONCLUSION

The findings of this study provide theoretical implications indicating that the implementation of the PBL model assisted by the TASUKA media aligns with Piaget's theory of cognitive development, which asserts that first-grade students are in the concrete operational stage and therefore require learning experiences involving real, tangible objects. In this context, the problem orientation and group inquiry stages within PBL were shown to enhance early writing skills—particularly in recognizing and forming the syllables la, li, lu, le, and lo—because students were not merely given material but were actively engaged in problem-solving through the manipulation of concrete media. These findings contribute further evidence that PBL is not only effective for subjects requiring abstract reasoning but also relevant to foundational literacy when paired with media appropriate to the child's developmental stage.

Practically, this study demonstrates that teachers can utilize PBL in a simple yet effective manner when supported by media such as TASUKA. This media increases student engagement, facilitates their understanding of syllable structures, and supports

[55] Baiq Halimatuzzuhrotulani, 'Meningkatkan Kemampuan Berbicara dalam Diskusi dengan Strategi Pembelajaran Berbasis Masalah pada Mata Pelajaran Bahasa Indonesia Kelas VI SD Negeri 2 Suralaga 2019/2020', *BADA'A: Jurnal Ilmiah Pendidikan Dasar* 2, no. 1 (2020): 65–85, https://doi.org/10.37216/badaa.v2i1.286.

learning that is more active, meaningful, and enjoyable. These findings may serve as a reference for schools and teachers to develop similar manipulative media and to encourage teachers to design creative learning activities aligned with the characteristics of early-grade students so that early writing skills can improve consistently.

The limitations of this study lie in the use of a single instructional model (PBL) without comparison to other models or strategies that may offer more varied learning experiences for early-grade students. Additionally, classroom observations were conducted via WhatsApp video call, which limited the ability to capture the full classroom dynamics in detail—particularly nonverbal expressions and spontaneous interactions among students. Given that first-grade students strongly require concrete learning experiences, future research should consider employing more diverse media and conducting direct classroom observations to obtain a more comprehensive picture of the effectiveness of the learning process.

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