

Optimizing Writing Skills through the Integration of PjBL and Learning Media

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Abstract

Writing is a crucial skill in Indonesian language learning, requiring the integration of cognitive, linguistic, and psychomotor aspects. However, the reality on the ground shows that students' mastery of writing skills is still suboptimal due to internal and external factors. This article discusses optimizing writing skills through the integration of the Project-Based Learning (PjBL) model and visual learning media. PjBL provides an authentic framework that motivates students through the completion of real projects and systematic stages, from determining fundamental questions to reflection. The integration of visual media serves as a visual stimulus that simplifies abstract information, stimulates critical thinking, and helps students organize ideas systematically into written text. The teacher's role transforms into a facilitator, mentor, and motivator who accompanies each phase of the project to ensure the achievement of learning objectives. Through this synergy, writing learning becomes more concrete, interactive, and meaningful for students.

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1. INTRODUCTION

Indonesian language learning, as stipulated in the national curriculum, encompasses four core skills: listening, speaking, reading, and writing (Wantika & Ahmadi, 2024). These four skills are interrelated, but writing is crucial because it demands the integration of various linguistic aspects. Writing demands perseverance, critical thinking, and mastery of linguistic techniques, as it involves systematically expressing ideas in written form. Good writing skills are the result of high-level cognitive processes, requiring the ability to process information, construct logical frameworks, choose appropriate diction, and apply applicable spelling rules simultaneously. These skills are essential for students to complete academic assignments, such as essays, research reports, or scientific papers, which demand clarity and precision of argument. Despite their vital role, the reality often shows that students' mastery of writing skills has not yet reached the expected level, particularly in terms of coherence and appropriate language use.

Various studies show that writing skills are often a challenging aspect for students. These difficulties stem not only from internal factors, such as limited vocabulary and the ability to organize ideas, but also from external factors, such as teachers' less varied learning approaches, minimal constructive feedback, and a lack of dedicated time for writing practice in class, which often exacerbate this problem, leaving students lacking motivation and clear guidance. Given the complexity of these challenges, innovative, process-centered learning strategies are needed (*process-centered approach*), rather than simply focusing on the final written result. Effective implementation of this strategy depends on the competence and professional readiness of the Indonesian language educators or teachers themselves.

As the primary facilitator, teachers play a strategic role in providing role models and practical writing learning models. When teachers can write and practice the writing process, they will more easily identify student difficulties and provide relevant guidance (Asip, 2022) and (Ahmadi, 2021). Students need teachers as companions in their learning process. Especially at the elementary (SD/MI) and junior high (SMP/MTs) levels, they still require structured direction and guidance from teachers to assist them in understanding and applying the material. This need for intensive guidance becomes even more crucial when students are faced with certain types of texts that require a systematic understanding of structure and thought processes.

These facts demonstrate the need for innovation in writing learning to stimulate students' creativity, motivation, and literacy skills. One alternative is the implementation of the Project-Based Learning (PjBL) method. This method emphasizes learning through real-life projects designed to develop critical, collaborative, and applicative thinking skills. In PjBL, students are guided to plan, implement, and evaluate projects relevant to the learning material so that knowledge is not only understood as concepts but also practiced in a broader context (Handiani, 2025). The PjBL approach provides space for students to work authentically, enabling them to connect writing skills with real and meaningful goals, thereby increasing intrinsic motivation. Although PjBL is project-centered, its successful implementation in the classroom still requires effective tools (media) to spark inspiration, visualize ideas, and collect data to be incorporated into writing. In other words, learning innovation lies not only in strategic methods but also in optimizing the use of media that can stimulate creativity and facilitate students' cognitive processes.

Besides methods, learning media also play a crucial role in improving the quality of learning. A wide variety of learning media can be utilized. However, some learning media are easy to use, while others are difficult. One medium that is easy to implement and readily available is images. Images can simplify abstract information, making it easier to understand, while also increasing student engagement in the learning process (Azizah et al., 2023; Budiyo, 2016).

Based on this description, the application of Project-Based Learning combined with image media is seen as relevant and has the potential to improve writing skills.

2. RESEARCH METHODS

This study uses a qualitative approach with a library research method. This approach was chosen because the study aims to examine in depth the concepts, principles, and empirical findings regarding the optimization of writing skills through the integration of Project-Based Learning (PjBL) and visual learning media. This study is descriptive-analytical, namely systematically presenting various theories and previous research results, then analyzing and synthesizing them to build a comprehensive conceptual framework regarding the effectiveness of PjBL and visual media integration in Indonesian writing learning, especially at the junior high school/Islamic junior high school level.

The data sources in this study consist of primary and secondary sources. Primary sources consist of national and international journal articles relevant to the topics of PjBL, writing skills, and learning media, with publications prioritized within the last ten years. Secondary sources include textbooks, proceedings, and theoretical references related to learning theory, learning media theory, Edgar Dale's Cone of Experience, and Piaget's theory of cognitive development. Literature selection was carried out selectively based on the credibility of the sources, relevance to the research focus, and its contribution to strengthening theoretical arguments.

Data collection techniques were conducted through documentation studies by identifying, reading, reviewing, and organizing literature relevant to the study's focus.

Reference searches were conducted through various academic databases and scientific repositories using keywords such as Project-Based Learning, writing skills, image media, Indonesian language learning, and learning innovation. The collected data were then analyzed using content analysis techniques through the stages of data reduction, grouping by theme, conceptual synthesis, and inductive conclusion drawing.

Data validity was maintained through source triangulation, which involves comparing various theories and research findings from various sources to gain a consistent and in-depth understanding. With this approach, the research is expected to provide a strong conceptual foundation regarding the importance of integrating PjBL and visual media in improving students' writing skills in a systematic, interactive, and meaningful manner.

3. RESULTS AND DISCUSSION

A. Writing Learning

Writing is a complex activity because it involves coordinating various cognitive, linguistic, and psychomotor aspects. During the writing process, students must focus their attention, generate ideas, choose appropriate vocabulary, structure sentences, and review their writing. Writing also requires phonological processing to access long-term memory and orthographic processing to produce accurate letter representations (Wardany & Andipurnama, 2023). Therefore, writing skills do not emerge naturally but require structured and continuous practice (Maulani & Hidayat, 2024). Mastery of basic writing techniques and structures through these exercises then serves as a foundation for students to develop creativity and reasoning skills in producing text.

Writing can be likened to a creative activity involving the simultaneous work of the right and left brain. Writers must connect ideas, sentences, paragraphs, and even larger sections of writing logically and coherently. Creativity in writing is not limited to the choice of diction, but also to the way the writer conveys their ideas in a style that is engaging and easily understood by readers. Therefore, writing is a complex skill that requires continuous practice and a deep understanding of the material presented. This skill serves as a communication tool as well as a means of self-reflection and the development of critical thinking. Given this important role, teaching writing skills receives special attention in the educational curriculum.

In the context of formal education, students' writing is an important indicator of successful Indonesian language learning (Ratnasari & Adiwijaya, 2023). Writing involves three domains of student development: cognitive, affective, and psychomotor. In the cognitive domain, writing encourages students to analyze information, evaluate arguments, and organize ideas systematically (Cahyani et al., 2025). The affective domain emerges when students develop motivation, interest, and confidence in expressing themselves through writing. Meanwhile, the psychomotor aspect is reflected in the fine motor coordination needed to produce good writing. Therefore, writing ability cannot be viewed solely as a technical skill, but rather as a complex, integrated process. To optimally hone these three domains, a structured and gradual learning strategy is required. An effective writing learning process must be designed in such a way that provides opportunities for students to plan, organize, and refine their work.

Learning to write in schools needs to be understood as a process involving prewriting, writing, and postwriting stages. In the prewriting stage, students gather information, determine topics, define problem boundaries, and design a writing outline. The writing stage involves developing the outline into a complete text, while in the post writing stage, students revise the content and edit the mechanics of the text. Implementing a complete writing process through these stages enables students to produce high-quality, structured writing. Students' success through each stage is

determined by the methods and support provided during the learning process. Therefore, the teacher's role in managing and guiding these stages is a key determinant of the effectiveness of writing learning.

For effective writing instruction, teachers must equip students with appropriate writing strategies at each stage, model learning, provide constructive feedback, and provide a supportive learning environment. Writing instruction should be geared toward the ability to produce various types of texts appropriate to sociocultural contexts. Teachers face significant challenges because writing instruction demands creativity, precision, and a comprehensive, step-by-step approach.

B. Understanding and Steps of Project-Based Learning

Various studies have shown that project-based learning (PjBL) significantly contributes to improving students' writing skills. PjBL has been shown to significantly improve writing skills, particularly in content development, vocabulary selection, language structure, and writing mechanics (Pamungkas et al., 2025). Similar findings emerged in language learning for Amharic speakers, where the implementation of PjBL resulted in significant improvements across all aspects of writing. These findings imply that PjBL provides an authentic framework that encourages students to interact functionally with the target language. The focus on completing a real-life project motivates students to go through stages of revision and refinement, which directly impacts the quality of their writing. Therefore, PjBL is recognized as a model that can be widely adapted across various linguistic contexts, including in Indonesia.

In the context of Indonesian language learning, the integration of PjBL with digital media further enhances learning effectiveness. (Klemens et al., 2025) found that students learning through digital-based PjBL demonstrated higher academic writing skills than students using conventional methods. This demonstrates that the use of technology can enrich students' thinking processes, improve the quality of their written products, and facilitate more independent learning.

Similarly, PjBL creates a more interactive learning environment and stimulates student creativity. Students report increased enthusiasm, self-confidence, creativity, and independent learning abilities when engaged in project activities (Pambudi & Harjanto, 2020). Learning effectiveness is further enhanced when teachers utilize visual media such as photos, illustrations, infographics, or videos. These media can increase the relevance of the material, stimulate students' attention, and facilitate their understanding of abstract concepts (Hamsiah et al., 2017). The use of visual media is an important foundation for developing more complex and engaging PjBL materials. Therefore, the combination of a product-focused PjBL strategy with the use of visually rich and interactive media creates optimal synergy in improving students' language skills. This synergy is then further expanded through the use of content relevant to students' backgrounds, such as elements of local culture.

The integration of local culture with interactive multimedia in Project-Based Learning (PjBL) also has a positive impact on the development of writing skills. (Andriyanto et al., 2025) showed that interactive multimedia based on local culture not only improves students' writing skills but also fosters a love and appreciation for regional cultural values. Teachers can utilize this approach to create contextual and meaningful projects so that the learning process becomes more relevant to students' experiences. The implementation of innovative learning strategies is needed to optimize this potential. One model that has proven effective in facilitating the development of students' holistic abilities, including writing skills, is Project-Based Learning (PjBL).

This model offers an ideal framework for integrating various aspects of learning, from cognitive to affective, through authentic tasks.

Project-Based Learning (PjBL) is a learning model that places projects at the core of the learning process. Projects are used as a medium for students to conduct in-depth investigations into authentic issues, phenomena, or problems relevant to their lives. This model requires students to construct knowledge independently through exploration, problem-solving, and the creation of tangible products, such as reports, presentations, visual works, or applied solutions. Thus, PjBL encourages students to engage in higher-order thinking processes, such as analysis, evaluation, and creation, in real-world contexts (Pohan & Sembiring, 2024).

The main steps in PjBL include: (1) determining the fundamental question, (2) project planning, (3) preparing an activity schedule, (4) implementing and monitoring progress, (5) assessing the product and process, and (6) reflecting on the learning experience. Each step is designed to enable students to develop critical, collaborative, and communicative skills through meaningful, hands-on experiences. This six-step framework ensures that the entire learning process is structured, student-centered, and produces an authentic end product. Effective implementation requires the teacher to actively facilitate each stage, from formulating the problem to guiding in-depth reflection. This entire series of steps is collectively known as the cycle or stages in PjBL.

To provide a more comprehensive understanding of the practical application of this model, an in-depth description of each phase is necessary. The following explanation will outline how each systematic step is implemented in the learning process, integrating the use of relevant supporting media to achieve optimal results. The operational details of these stages in the context of project-based learning are as follows:

1. Determining the Project Theme

The initial stage focuses on selecting a theme that is relevant to the students' lives and has the potential for in-depth study. Themes should be challenging, contextual, and allow students to explore information from various sources. At the junior high school/Islamic junior high school level, the use of visual media has proven effective in helping students identify topics more concretely. Visualization through images not only makes it easier for teachers to introduce themes but also increases students' interest and attention in the material presented. This interest stimulates students' analytical skills because they can observe objects directly, compare information, and draw initial conclusions before moving on to further investigation (Magdalena et al., 2021).

2. Project Planning

At this stage, teachers and students collaborate to systematically formulate a project work plan. The plan includes learning objectives, activity steps, learning resources, and the final product. Activity schedules and task allocations are also developed if the project is being worked on in groups (POLMED, 2022). Using images as reference sources helps students build a more structured conceptual framework for the project. These visualizations clarify relationships between concepts and facilitate the design of logical and measurable activity flows.

3. Project Implementation

The implementation phase is the core of PjBL, where students begin working on projects based on a pre-developed plan. They explore information, analyze data, and develop ideas based on visual and non-visual sources. Technology such as laptops, the internet, presentation applications, and image processing software

provides significant support for students to develop creativity and produce quality products (Capraro et al., 2013). At this stage, students are required to apply critical thinking skills and make sound decisions to address emerging challenges.

4. Monitoring and Assistance

Although PjBL emphasizes independent learning, the teacher still plays a facilitator role, monitoring the progress of the project. Teachers provide motivation, direction, guidance, and constructive feedback so that students can maintain the quality of their work in line with the initial objectives (Santi, 2011). Furthermore, teachers ensure fair distribution of tasks within the group and help identify and address obstacles that could hinder the project's success.

5. Presentation and Assessment

After the project is completed, students present their work in a presentation. The final product can be a visual poster, portfolio, written report, or multimedia presentation utilizing images and illustrations (Sulistyo et al., 2019). Assessment is comprehensive, encompassing the work process, final product quality, collaboration skills, creativity, and analytical accuracy. Authentic assessment encourages students to reflect on the thinking patterns and work strategies they have used.

6. Reflection

Reflection is the final stage, providing space for students and teachers to evaluate the learning experience. Through reflection, students analyze their successes and difficulties and identify improvement strategies that can be used in future projects (Günzel & Brehm, 2024). This process strengthens metacognition, the student's ability to assess and regulate their own learning.

The entire series of phases above demonstrates that PjBL is not simply a method for completing tasks, but rather a cognitive cycle designed to simultaneously hone various student competencies. Successful implementation of each stage is the main foundation for strengthening students' thinking structures. This aligns with the fact that the PjBL approach allows students to integrate critical thinking, communication, collaboration, and creativity skills. When PjBL is combined with visual media, the learning process becomes more concrete, engaging, and accessible to students. Visual media helps students make observations, identify patterns, and connect information into more complex knowledge structures (Eko et al., 2024).

In the context of using visual media, images play a strategic role as a stimulus for critical and creative thinking. Through observation, visual analysis, and image interpretation, students are encouraged to develop ideas more systematically and write them down in structured and meaningful text. Therefore, the integration of images into PjBL not only enriches the learning experience but also substantially strengthens students' writing skills.

The use of images also simultaneously strengthens visual and verbal literacy skills. Students not only interpret visuals but also transform them into more structured written texts, such as reconnaissance texts, observational reports, and analytical descriptions. Thus, visual media acts as a cognitive bridge, connecting observational experiences to higher-order thinking skills.

While PjBL offers numerous advantages, its implementation requires thorough preparation, resource support, and teacher readiness to adapt from lecture-based methods to more flexible and participatory learning. Therefore, when implemented optimally, image-based PjBL can create meaningful, challenging, and contextual learning experiences for students.

C. The Role of Teachers in Project-Based Learning

The role of teachers in Project-Based Learning (PjBL) is no longer limited to conveying information, but has evolved into facilitators, mentors, and motivators who guide students through the stages of investigation and the creation of learning products. Teachers are responsible for systematically managing the learning process, starting from setting project schedules, formulating fundamental questions, monitoring student progress, and assessing final results based on authentic criteria (Wijayanti, 2024). Thus, teachers play a strategic role in ensuring that PjBL runs effectively, is process-oriented, and student-centered. This strategic role can be further broken down into several specific functions that are essential for the successful implementation of PjBL. Three main roles that teachers must fulfill are as facilitators, mentors, and authentic assessors. The following sections will detail how teachers implement each of these roles in the classroom.

1. Teacher as Facilitator

In the context of PjBL, teachers act as facilitators who accompany students through every phase of learning. This role includes not only providing initial guidance but also technical and pedagogical support as students develop ideas, organize work steps, and implement projects (Chikurteva & Chikurtev, 2020). For junior high school (SMP/MTs) students learning using visual media, as learning facilitators, teachers are tasked with helping interpret visual meanings, linking them to real-life experiences, and transforming them into logical and systematic written texts. Teachers also create a democratic and collaborative learning environment for effective interactions, discussions, and group work. Thus, teachers play a role in ensuring that students are able to critically elaborate on visual information and produce meaningful learning.

2. Teachers as Mentors

Teachers also act as mentors, providing consistent guidance throughout the project. Through constructive feedback, teachers help students correct errors, strengthen their analysis, and refine their ideas (Sahoo & Patnaik, 2023). In image-based projects, such as creating posters, picture stories, or reconstructed texts from images or photographs, the teacher's role is to guide students in making detailed observations, asking thought-provoking questions, and helping them see cause-and-effect relationships within visual information. This guidance enables students to develop higher-order thinking skills as they need to analyze, evaluate, and integrate various visual information to construct a coherent and argumentative written product.

3. Teachers as Motivators

Teachers also have a responsibility to maintain students' motivation, persistence, and emotional stability during project work. Obstacles such as confusion over ideas, technical challenges, and group dynamics often arise in the PjBL process (Wu, 2024). In these situations, teachers provide moral and academic support to keep students focused and confident. Teachers can provide positive reinforcement, reflective challenges, or short demonstrations that inspire students to continue developing their skills. Through evaluations that encourage metacognitive awareness and self-reflection, students at the junior high school or Islamic junior high school level can understand that the process of writing and interpreting images is not simply completing an assignment, but an essential skill relevant to everyday life and the future.

D. Student Activities in Project-Based Learning

In Project-Based Learning, students play an active role as designers, researchers, collaborators, and creators of learning products. This active involvement allows them to explore their potential while practicing their ability to identify problems, test alternative solutions, and determine problem-solving strategies independently and in groups (Kahar & Ili, 2022). Through Project-Based Learning (PjBL), students not only understand the content but also develop higher-order thinking skills through authentic and contextual learning experiences. To achieve effective learning objectives, Project-Based Learning (PjBL) must be implemented through a series of systematic and structured work stages. In general, the PjBL implementation cycle involves the phases of design, collaboration, critical thinking, practice, technology utilization, individual and group work, evaluation, and reflection. The following discussion will detail each phase students go through in implementing the project.

1. Project Design

In the design stage, students are allowed to determine the activities and product forms they want to produce according to their interests and needs (Wulandari, 2019). For junior high school students using visual media, this process can begin by selecting visuals relevant to the project theme. From these images, students set goals, determine the type of final product, such as a poster, report, or narrative text, and formulate systematic work steps. Through this stage, students develop a sense of ownership of the project, resulting in intrinsic motivation that strengthens their commitment to learning.

2. Collaboration and Communication

The PjBL model emphasizes the importance of collaboration as part of the learning process. Students discuss, share ideas, present arguments, and assign roles according to their respective competencies (Rohmah et al., 2020). These communication activities develop interpersonal skills, the ability to express opinions clearly, and respect others' perspectives. In image-based projects, discussions can focus on visual interpretation, the meaning of the image, important details that need to be analyzed, and how the visual information can be developed into a written product. This process encourages students to simultaneously integrate visual literacy and language literacy.

3. Critical Thinking and Problem Solving

During projects, students are confronted with problems or situations that require in-depth analysis. They learn to evaluate information, generate alternative strategies, and test solutions to ensure the most effective outcome (Aubrecht et al., 2011). For example, when the images or photographs used in a project don't provide enough information, students may need to seek additional sources, conduct field observations, or formulate investigative questions. This process stimulates critical thinking skills and strengthens the cognitive strategies needed to systematically solve problems.

4. Practice-Based Activities

PjBL provides a space for students to learn through hands-on experiences. In the context of visual media, students can engage in activities such as taking photographs, editing visuals, creating storyboards, or developing written narratives based on analyzed images (Mativo et al., 2017). These practice-based activities help students understand abstract concepts through concrete experiences, making learning more meaningful, applicable, and relevant.

5. Utilization of Digital Technology

Digital technology is a crucial element in project work, whether for searching for information, processing images, or preparing presentations. The use of technology can increase students' cognitive and affective engagement by enabling them to process information more quickly, creatively, and deeply (Pertiwi & Herlina, 2025). In visual projects, technology supports students in observing image details, composing designs, creating digital posters, or editing to improve product quality. Thus, in addition to understanding the material, students also acquire digital skills relevant to the demands of the modern era.

6. Individual and Group Work

The PjBL model balances individual and group work (Tianti et al., 2024). Some tasks, such as personal reflection or visual analysis, can be completed independently. Meanwhile, activities like strategy development, discussions, and presentations are conducted in groups to develop collaborative skills. This flexibility allows for more adaptive learning to each student's learning style and developmental needs.

7. Evaluation and Reflection

The final stage of the project involves presenting the results of the work in the form of posters, image-based recount texts, reports, or other media (Rohmah et al., 2020). After the presentation, students are directed to reflect on the learning process, including aspects of success, obstacles encountered, and improvement strategies. This reflection helps them recognize the development of their thinking, communication, and visual interpretation skills, thus providing a foundation for more optimal subsequent learning.

E. Instructional Media

Learning media is a fundamental component in the learning process because it functions as an intermediary in conveying messages from teachers to students. Etymologically, the term...*media* comes from the Latin word *medium* which means "intermediary." From a communication perspective, media is understood as any form of vehicle that facilitates the transfer of information from the communicator to the recipient (Pagarra et al., 2022). Appropriate use of media not only clarifies the delivery of material but also improves students' ability to understand information conceptually and procedurally. Therefore, selecting appropriate media is a strategic factor in achieving learning objectives. This strategic nature requires a clear understanding of the essence of media, not merely as a tool but as a message carrier itself. This understanding is crucial because effective media must be able to transform learning content into a form that is easily accessible and processed by students' senses. This transformation allows the definition of learning media to be further elaborated based on its constituent elements.

The elements that make up learning media include two main elements, namely *software* and *hardware*. *Software* refers to the message or information contained in the media, whereas *hardware* is a physical device used to convey the message. An object, such as a human anatomy model, is categorized as a learning medium if it contains educational information that students can learn from. Otherwise, the object only functions as a teaching aid. Therefore, it is important to distinguish between learning media, teaching aids, and aids; the media must contain both messages (*software*) and the delivery device (*hardware*). This emphasis on dual elements (message and device) indicates a shift in focus from mere physical tools to the role of media as an integrated information delivery system. Over time, the definition and function of media are no longer limited to hardware, but have evolved following innovations and complexities

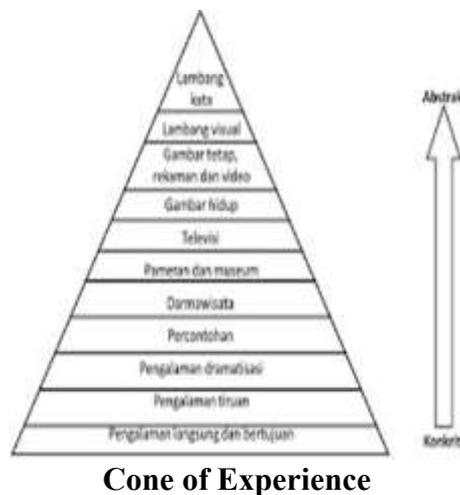
in instructional design. This historical development has given rise to various ideas and perspectives regarding the role of media in educational contexts.

The development of educational technology has led to a paradigm shift regarding learning media. There are four main paradigms in the development of technology

1. Media as an audiovisual aid
2. Media is a product that is developed systematically by following the principles of communication
3. Media is an integral component in the learning system that mutually influences other learning components
4. Media is a learning resource that is specifically developed to support learning activities

In the digital era, the fourth paradigm is gaining strength. Learning media no longer function merely as a teacher's aid, but rather as a primary learning resource, particularly in the context of online learning. Digital media's ability to display text, images, animation, sound, and interaction makes it effective for building adaptive and multimodal learning experiences.

The use of learning media often refers to the theory of *Cone of Experience* from Edgar Dale (1969) in (Pagarra et al., 2022). Dale classified 11 levels of learning experiences from the most concrete to the most abstract. The more concrete the learning experience, the more likely students are to understand and retain the information.



The following is a systematic explanation of each level in Dale's cone of experience.

1. Direct experience allows students to experience an event for themselves in real life.
2. Simulation experiences allow students to study phenomena through models, mock-ups, or imitation objects.
3. Dramatization involves simulations, role-playing, or performances that aim to help students understand a particular situation in depth.

4. A demonstration shows a process or procedure directly.
5. Exhibitions facilitate students to display their work or learning outcomes.
6. Television presents information through visual displays.
7. Motion pictures or films show events dynamically and can be repeated.
8. Radio provides oral information that enriches knowledge.
9. Images convey information visually.
10. Visual symbols in the form of graphs, charts, comics, and the like.
11. Verbal symbols in the form of written and spoken words or sentences.

This cone of experience is highly relevant for learning, particularly at the elementary school level. According to Piaget's theory of cognitive development, elementary school-aged children are in the concrete operational stage, a phase where they understand the world through real objects and visual representations. Because not all objects or phenomena can be presented directly, for example, the solar system, the growth process, or microorganisms, learning media serve as a bridge that transforms abstract concepts into more concrete ones. Learning media, such as three-dimensional models, diagrams, or simulations, provide visualizations that help overcome the limitations of children's imagination in processing information they cannot see or touch. Thus, complex and abstract concepts can be simplified and visualized into forms that are easily accessible and analyzed by the mind at the concrete operational stage. This cognitive bridge enables effective knowledge transfer, ensuring that the understanding developed is concrete and in-depth, not simply verbal memorization.

Psychologically and didactically, learning media play a role in increasing students' readiness to learn, reducing verbalism, and helping them connect new knowledge with relevant experiences. Media such as images, videos, animations, and interactive multimedia enable students to gain rich learning experiences even without direct involvement. The existence of modern information technology-based media provides opportunities for teachers to design more interactive, contextual, and student-centered learning. Thus, learning media not only supports cognitive development but also enhances students' analytical skills, creativity, and digital literacy. Based on these significant benefits and functions, the selection and use of media must be based on mature pedagogical considerations. Each type of media used in the teaching and learning process must have clear objectives. Therefore, it is important to understand the specifics of media use in learning activities.

F. Purpose of Using Media in Learning

The use of media in the learning process in elementary schools, both for individual and group learning, plays a strategic role in improving the quality of learning interactions. Kemp and Dayton (1985), in Pagarra et al. (2022), proposed three main purposes for using learning media: conveying information, motivating students, and creating meaningful learning activities.

1. Delivering Information (*To Inform*)

Learning media serves as a communication channel that bridges the delivery of messages from teachers to students. In a pedagogical context, media allows learning materials to be presented in a more systematic, structured, and easily accessible format. Advances in information technology have expanded the means of information delivery, not only through print media but also through visual, digital, and interactive multimedia. These varied media formats accommodate the differences in students' sensory abilities, namely hearing, sight, and verbal abilities, thereby minimizing barriers to receiving and processing information. Therefore,

selecting the right learning media can strengthen the effectiveness of message delivery and enrich students' cognitive experiences.

2. Motivate (*To Motivate*)

Learning motivation is a key determinant of learning success. Students with low motivation tend to be passive and face obstacles in achieving learning goals. In this regard, learning media plays a strategic role in fostering motivation, both intrinsic and extrinsic. Media designed to be engaging, varied, and relevant can reduce boredom, stimulate curiosity, and create a pleasant learning environment. Appropriate media selection is expected to increase student engagement at every stage of learning and contribute to optimizing learning outcomes.

3. Creating Learning Activities (*To Learn*)

The ultimate goal of learning is the creation of meaningful learning experiences (*meaningful learning experience*). Learning media serve to encourage students to actively explore, construct knowledge, and integrate new experiences with prior knowledge. For elementary school students, who are in the concrete operational development phase, media is essential for providing authentic, engaging, and enjoyable learning experiences. Interactive media allows students not only to passively receive information but also to engage in diverse learning activities, such as simulations, visual explorations, and multimedia-based exercises. This diversity of activities improves the quality of student engagement and strengthens the process of internalizing concepts.

G. Functions of Learning Media

As a component of instructional communication, learning media has several functions that reinforce its role in increasing learning effectiveness. These functions include:

1. Student Focus Director

Aesthetically designed, interactive, and relevant media can optimally capture students' attention. For elementary school students, media plays a role in directing focus and reducing distractions, allowing for a more conducive learning process.

2. Evoking Students' Emotions and Motivation

The use of engaging media, such as colorful images, animations, or videos, can influence students' emotional responses. Media that present visualizations that differ from textbooks can generate enthusiasm and encourage students to understand the material more deeply. In this way, teachers can create a lively and motivating learning environment.

3. Organizing Learning Materials

Visual media such as tables, graphs, charts, and diagrams help structure information. These visual representations make it easier for students to understand the relationships between concepts, thereby improving comprehension and memory.

4. Perception Equalizer

Learning media serve to concretize abstract concepts so that students have a unified perception of the material being studied. Delivering abstract information orally can potentially lead to differing interpretations; conversely, concrete visualizations help clarify meaning and minimize ambiguity.

5. Student Response Activator

The use of varied media can overcome students' tendency to be passive. Media encourages active participation, whether through observation, exploration, analysis, or direct interaction. Media can also stimulate students to seek information

independently before confirming with the teacher. Thus, media reinforces active learning (*active learning*).

H. Benefits of Learning Media

Practically, learning media provides several benefits for the teaching and learning process, including:

1. Clarify the presentation of messages so that learning is smoother and learning outcomes improve.
2. Increase attention and motivation to learn and facilitate direct interaction between students and the environment.
3. Overcoming the limitations of the senses, space, and time, for example:
 - a) Objects that are too large can be replaced with pictures, photos, or models.
 - b) Objects that are too small can be seen through a microscope or magnified image.
 - c) Rare events can be shown through video recordings.
 - d) Complex processes such as blood circulation can be visualized through computer simulations.
 - e) Dangerous events can be replaced with multimedia simulations.
 - f) Natural phenomena or long-term processes can be presented using techniques of time-lapse.
4. Providing a uniform learning experience, enabling richer interactions between students, teachers, and the environment.

In the context of primary education, the use of learning media is crucial because it can reduce learning boredom, increase motivation, and strengthen instructional communication. Visual media such as pictures, photographs, or illustrations have been proven effective in increasing student interaction and engagement (Kholifah et al., 2024).

I. Criteria for Selecting Learning Media

The selection of learning media is a strategic component in instructional design because it determines the effectiveness of message delivery and the success of achieving learning objectives. Media cannot be used haphazardly or simply based on availability; rather, they must be selected based on an analysis of learning needs, student characteristics, the social environment, and supporting resources. This process requires teachers not only to understand the media's function but also to evaluate its suitability for the objectives, materials, and methods used. Therefore, selecting learning media becomes a systematic activity that requires rational consideration, not a spontaneous act.

In general, there are several basic principles that must be considered in determining the appropriate media. First, teachers need to analyze the characteristics of each medium, including its advantages, limitations, and pedagogical potential. Second, the media must align with the learning objectives so that it can support the achievement of the planned competencies. Third, the media selection must be in accordance with the applied learning method to avoid disharmony between the strategy and instructional aids. Fourth, the media must be relevant to the material to be communicated so that it can clarify the concepts being taught. Fifth, media must be selected based on their suitability to student characteristics, including age, level of cognitive development, number of students, and learning background. Sixth, media should consider environmental conditions, including school facilities and the socio-cultural context. Finally, teachers are advised not to choose media solely because of its availability, but rather because of its pedagogical suitability.

In practice, media selection also requires contextual considerations related to the learning situation and the media's ability to convey the desired message. Several steps can be used to identify relevant media, including procurement and maintenance costs, the media's suitability for the teaching method, relevance to student characteristics, ease of use, security, and the availability of supporting facilities. Furthermore, the availability of media and its components is also a crucial factor in determining its continued use.

Essentially, media selection criteria can be classified into two broad categories: practical feasibility and technical feasibility. Practical feasibility relates to the teacher's level of familiarity with the media, its availability in the school environment, the time available for preparation, and the adequacy of supporting facilities and infrastructure. Meanwhile, technical feasibility emphasizes the media's ability to stimulate students' learning processes. This technical feasibility encompasses message quality, including relevance to learning objectives, clarity of information structure, ease of understanding, and systematic presentation. In addition to message quality, visual quality is also an important aspect, particularly in terms of aesthetics, simplicity of display, emphasis on important information, coherence, and balance of layout.

In addition to suitability to learning objectives, other factors must be considered when selecting media, including the availability of local resources, adequate funding, personnel, and supporting facilities, the media's practicality and durability, long-term cost-effectiveness, and the teacher's ability to determine the most appropriate media. All of these considerations require teachers to conduct critical analysis and comprehensive evaluation before selecting media as an integral part of the instructional process.

J. Principles of Selecting Learning Media

The principles of selecting learning media are inseparable from learning theory and psychological principles that influence students' internalization of information. Pedagogically, good media is one that facilitates optimal learning conditions and supports the achievement of instructional objectives. Therefore, several fundamental principles should be used as a reference when teachers select and use media in learning activities.

First, motivation is a key element because students need to have an interest, need, or drive to learn before they can be directed to complete assignments through media. Media must be able to provide relevant and meaningful learning experiences to foster students' intrinsic motivation. Second, media selection must take into account individual student differences, including ability level, intelligence, educational background, personality, and learning style. The speed of information presentation must be tailored to the student's level of understanding to ensure effective internalization of knowledge.

Third, media must support the achievement of learning objectives. Clarity of objectives allows teachers to select the material that needs to be emphasized and structure the material in a focused manner. Fourth, the organization of content within the media must be logical, meaningful, and arranged according to the level of complexity. Systematic presentation of material not only facilitates understanding but also strengthens long-term memory. Fifth, students must have prior experience or mastery of prerequisites before using a particular medium to avoid obstacles in understanding the information presented.

The emotional aspect is also an important consideration because learning media can evoke emotional responses that can strengthen the learning experience. Media that

present affective elements can increase empathy, concern, and emotional attachment to the material. Furthermore, the principle of participation states that learning will be meaningful if students are actively involved, not just passively receiving information. Therefore, media must be designed to encourage interactivity. The principle of feedback is also important because information regarding learning progress helps students maintain motivation and correct deficiencies. Furthermore, reinforcement (*reinforcement*) needs to be given so that learning success can trigger the motivation to learn further.

Practice and repetition are another unavoidable principle, given that knowledge and skills cannot be mastered with a single exposure. Media must allow for repetition in various contexts so that knowledge can persist in long-term memory. Furthermore, the principle of applicability requires that learning outcomes be transferable to real-life situations or new contexts. Therefore, the media must provide opportunities for students to apply their knowledge.

From a learning implementation perspective, several additional principles are important. No single medium is superior for all learning objectives; each medium has its own functions and limitations. Media are an integral part of the entire learning process, not simply an additional tool. Therefore, media selection must align with all components of the instructional plan. The media should prioritize student learning as the ultimate goal. Furthermore, the use of various media must be designed appropriately, not simply as a distraction or entertainment. The principle of objectivity must also be maintained; media selection should not be based on the teacher's personal preferences. Using too many media in a single learning session can confuse students, requiring strict selection based on function and purpose. Finally, the quality of media does not depend on its level of concreteness or abstractness, but on the extent to which it can provide an in-depth and accurate understanding.

4. CONCLUSION

The integration of the Project-Based Learning (PjBL) model and the use of learning media (especially images) is a concrete solution to address the complexity of writing material at the junior high school level. Writing is not merely a technical activity, but rather a high-level cognitive process that involves the simultaneous coordination of cognitive, affective, and psychomotor aspects. By implementing PjBL, writing activities are transformed from mere academic assignments into real-life projects that require students to think critically, collaborate, and produce authentic products.

The success of this integration depends heavily on the media's role as a cognitive bridge. Visual media has been shown to simplify abstract information, spark inspiration, and help students build more structured conceptual frameworks. Based on the theory of *Cone of Experience*, the use of visual media provides a more concrete learning experience compared to only relying on verbal symbols, so that the understanding built by students becomes deeper and not just memorization.

Furthermore, this synergy demands a paradigm shift in the role of educators. Teachers are no longer the center of information, but rather act as facilitators, mentors, and motivators, accompanying each stage of project work. Through structured mentoring and the use of varied media, teachers can increase students' intrinsic motivation, reduce boredom, and ensure that the writing process is a fun and relevant activity to everyday life.

Overall, the implementation of media-based PjBL not only improves the quality of students' writing in terms of coherence and language structure but also equips them with 21st-century skills. Students not only learn to write but also learn to manage technology,

solve problems independently, and reflect on their own learning process. This innovation creates a strong literacy ecosystem, where both internal and external barriers to writing can be overcome through meaningful and applicable learning experiences.

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