

The Role Of Teachers In Stimulating The Ability To Recognize The Letters Of The Alphabet Through The Use Of Interactive Flat Panel (IFP) Media In Early Childhood

Apsari Susanti¹, Tuti Alawiyah², Juandra Prisma Mahendra³

¹²³Program Studi Pendidikan Anak Usia Dini, STKIP Hamzar, Lombok Utara

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Abstract

The ability to recognize alphabet letters is a crucial foundation for early childhood in preparing early literacy skills. However, it was found that most children in class A2 at TK Negeri Pembina Dewi Anjani still struggle to distinguish similar-looking letters such as b-d and p-q. This study aims to describe the teacher's role in stimulating the ability to recognize alphabet letters through the utilization of Interactive Flat Panel (IFP) media. This study is a qualitative descriptive field research. The subjects were 19 students. Data were collected through observation, interviews, and documentation. Data analysis used data reduction, data display, and drawing conclusions. The findings of this study are: (1) The teacher's role includes serving as a multisensory learning designer, a facilitator of play-based learning, a mediator of evaluation, and a balanced classroom manager. (2) The impacts include the development of cognitive abilities, increased child focus, and the enhancement of children's sensory-motor skills. (3) Supporting factors include the availability of multi-touch features, abundant learning content, and teachers' creativity. Inhibiting factors include technical constraints, classroom management challenges, insufficient teacher competence, and high repair costs. This research is expected to be a reference in the use of digital technology in early childhood education.

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Corresponding Author:

Apsari Susanti, Tuti Alawiyah

STKIP Hamzar, Lombok Utara

Email: apsarisusanti9@gmail.com

1. INTRODUCTION

Early Childhood Education (PAUD) is an education provided to children aged 0-6 years old, which is carried out by providing or fostering various stimuli to help obtain growth and development, both physical and spiritual, so that children are ready to enter the next level of education. The importance of stimulating children from an early age is that their development is more optimal because early childhood is a sensitive period for children to receive stimulation and stimuli. One aspect of development that must be stimulated in early childhood is cognitive abilities as a manifestation of the development of maturity of the thinking process in the scope of play.

Cognitive development is a crucial aspect of human development, encompassing the overall mental processes related to knowledge, problem-solving, understanding, reasoning, and decision-making (Anisyah, 2025:70). Within the scope of early childhood education, cognitive development encompasses general knowledge, science, concepts of shape, color, size, patterns, number symbols, and letters (Warmansyah, et al., 2023:6). The ability to recognize letters in early

childhood is a crucial skill, as children begin to understand the relationship between letter shapes and their sounds (Dea, et al., 2025:149). This is the foundation for children to be able to read and write, which must be achieved through a play-while-learning approach without any coercion.

The alphabet is a grapheme in a writing system that represents the sounds of a language (Saepudin et al., 2023:52). Carol Seefeldt and Wasik, in Nursaadah et al. (2025:1955), explain that the ability to recognize letters is an initial skill in understanding the symbols of language sounds, which is the basic foundation of children's literacy. However, a common problem often faced is that young children tend to give up easily, get bored easily, and have difficulty concentrating for long periods of time (Veronica, 2022:25). They will easily abandon activities that are less enjoyable (Waty et al., 2024:4).

Based on initial observations in the A2 class of the Pembina Dewi Anjani State Kindergarten, it was found that many children still cannot recognize the letters of the alphabet, both uppercase and lowercase. Children still confuse the shapes of similar alphabet symbols (such as b-d and p-q), and are easily bored with conventional methods. Wardono (2025) emphasized that children's difficulty in recognizing letters is influenced by internal factors (memory of letter shapes) and external factors (lack of interesting literacy stimulation).

As an innovative solution, the use of digital technology in the learning process is highly relevant. One interactive medium that is starting to be used is the Interactive Flat Panel (IFP). IFP is a flat-screen device that combines touchscreen technology with a large audio-visual display (Muhlis et al., 2025:99). The use of digital media, guided by teachers, can create a more varied, enjoyable, and modern learning environment (Susanto et al., 2025:13). IFP allows for direct interaction, the use of multimedia, the visualization of abstract concepts, and active student involvement.

The role of teachers is vital to the success of this IFP integration. Teachers are not only conveyors of material, but also motivators, facilitators, and evaluators (Haryono et al., 2025:77; Hayati et al., 2026:178; Mashudi et al., 2025:114). Teachers must be able to design and implement effective learning that adapts to students' needs using relevant media (Silvester et al., 2024:31). Previous research by Mustiani (2023), Arnada (2025), and Habibah (2022) has shown that innovative learning media can improve letter recognition skills, but in-depth studies on the role of teachers in utilizing IFP specifically for early literacy are still very limited.

Therefore, this study aims to describe: (1) the role of teachers in stimulating the ability to recognize letters of the alphabet through the use of IFP media; (2) the impact of using IFP media on children's letter recognition abilities; and (3) supporting and inhibiting factors in the use of IFP media in Kindergarten Negeri Pembina Dewi Anjani class A2.

The main contribution of this study lies in providing an empirically grounded, role-specific account of how teachers translate the general pedagogical functions of facilitator, motivator, and evaluator into concrete, IFP-specific practices—namely multisensory instructional design, gamified facilitation, low-stakes evaluation mediation, and balanced screen-time management—within the everyday classroom setting of an early childhood institution. Whereas previous studies (Mustiani, 2023; Arnada, 2025; Habibah, 2022) have primarily measured the effectiveness of various letter-recognition media on children's outcomes, this study contributes a process-oriented perspective that foregrounds the teacher's active mediating role, offering practical, transferable insight for early childhood educators and institutions considering the adoption of interactive digital media such as IFP for early literacy instruction.

2. RESEARCH METHOD

This research uses a descriptive qualitative approach. Sugiyono, in Rohmaniyah (2024:66), states that qualitative methods are interpretive and naturalistic, conducted in natural settings without manipulation. This type of research is field research, which aims to obtain data directly from informants (Lasiyama et al., 2022:47).

The research was conducted at the Pembina Dewi Anjani State Kindergarten, Bayan District, North Lombok Regency, specifically in class A2 in the even semester of the 2025/2026

academic year with 19 students. Data sources consisted of primary sources (principal, class A2 teacher, and students) and secondary sources (RPPH documents, teaching modules, and school profiles) (Diana et al., 2023:58; Ahmad et al., 2024:64).

Data collection techniques were carried out through: (1) non-participant observation to observe the teaching and learning process of teachers and students (Nasution, et al., 2020:12); (2) Structured interviews with school principals and class teachers to gather in-depth information regarding strategies and obstacles; and (3) Documentation in the form of photos of learning activities and administration (Rachmad, et al., 2024:128). Data collection instruments were in the form of observation checklist sheets, interview guidelines, and documentation guidelines.

The informants in this study were selected purposively based on their direct involvement in and knowledge of the implementation of IFP-based learning. The class A2 teacher was selected as the primary informant because she was the one who planned, delivered, and evaluated the IFP-based letter-recognition activities on a daily basis, making her the most information-rich source regarding the teacher's role and its challenges. The school principal was included as a complementary informant due to her institutional oversight of facility provision, budgeting for IFP maintenance, and school-wide digital learning policy, providing a managerial perspective that could be cross-checked against the teacher's classroom-level account. All 19 class A2 students were involved as observation subjects, rather than as interview informants, given their age and limited capacity for structured verbal reporting; their letter-recognition behaviors and responses to IFP-based activities were instead documented through direct, non-participant observation and anecdotal recording. This combination of informants and observation subjects was intended to capture the phenomenon from complementary vantage points—managerial, instructional, and child-level—thereby strengthening the credibility of the findings through source triangulation.

Data analysis refers to the interactive model of Miles and Huberman in Indrawati et al. (2025:93), which consists of three stages: data reduction (summarizing and selecting basic data), data presentation (organizing information in the form of narrative text), and concluding. To ensure the validity of the data, researchers used source triangulation (testing data from teachers, principals, and students) and technical triangulation (checking data through observation, interviews, and cross-documentation) (Irawan et al., 2025:59; Sofyan, 2022:173).

3. RESULTS AND DISCUSSION

1) The Role of Teachers in Stimulating the Ability to Recognize Letters of the Alphabet Through IFP Media.

Based on observations and interviews in class A2 of Dewi Anjani State Kindergarten, teachers play a crucial role in transforming abstract stimuli (conventional writing) into dynamic and engaging visual-kinesthetic stimuli through IFP. These roles include:

- a) Multisensory Learning Designer (Instructional Designer): Before implementing the learning, teachers always prepare a Teaching Module (RPPH) that specifically integrates the use of IFP media once a week. Teachers design visual and auditory-based educational content, such as a guessing game for the initial letter according to the learning topic ("A" for "Apple") and a bolding activity directly on the screen. This is in line with Silvester et al. (2024:31) that teachers must design structured learning that is appropriate to the characteristics of children's cognitive and motor development. Good design serves as documentation of teacher professionalism (Zubaidah et al., 2026:165) and is relevant to the teacher's role as a designer of gamification elements (Laksono et al., 2025:190).
- b) Gamification Facilitator: The teacher not only presents the material but also facilitates direct interaction between the children. The teacher regulates the flow of the game, guides the children in taking turns, and ensures that all 19 students receive equal opportunities. As a facilitator, the teacher creates a conducive learning environment (Hayati et al., 2026:178). Before the lesson begins, the teacher also makes an agreement on class rules to ensure the class remains conducive despite the children's enthusiasm.

- c) Evaluation Mediator: Teachers utilize educational games in IFP as a summative evaluation tool without making children feel like they are being tested. Games such as letter matching or interactive quizzes are used by teachers to monitor children's understanding of letter shapes and sounds. This evaluator role is crucial for determining the success of material absorption (Mashudi et al., 2025:114; Laksono et al., 2025:190).
- d) Balanced Classroom Management: To prevent digital screen dependence and eye strain, teachers limit IFP use to a maximum of 20 minutes during core activities. Afterward, teachers move on to conventional fine motor activities such as singing, pasting, or rewriting letters on paper. This classroom management requires teachers to be proactive in addressing the attention spans of young children (Samsudding, 2026:82).

2) The Impact of Using Interactive Flat Panel (IFP) Media

IFP integration has a significant impact on the development of early literacy in children in Grade A2, including:

- a) Cognitive Impact: Children show rapid progress in distinguishing letters of the alphabet that have similar symbols (e.g., b and d, p and q). Visual animation and clear sound feedback (phonic audio) help strengthen children's memory retention. This is in accordance with Lamadang (2026:70) that cognitive development includes the process of remembering and understanding. This multisensory experience accelerates children's understanding of the concept of vowels and consonants.
- b) Improved Learning Focus: Large screen displays (IFPs) with their brightness and sharp colors successfully focus the attention of children who were previously easily distracted. Children become more obedient and enthusiastic. Merakati et al. (2026:23) emphasized that interactive digital media significantly facilitate understanding and keep students focused due to the enjoyable learning environment.
- c) Sensory-Motor Impact: Unlike conventional projectors, IFPs allow children to touch, drag, and write directly on the screen. This activity stimulates hand-eye coordination and stretches the child's finger muscles. Media selection should be based on sensory-motor developmental needs (Azhari, 2025:91).

3) Supporting and Inhibiting Factors

In its implementation, the smoothness of learning using IFP is supported and hindered by several factors:

Supporting Factors: (1) Multitouch Features: The screen's ability to respond to touch facilitates the "play while learning" learning model, which is the core of PAUD (Rachmi et al., 2025:59). (2) Abundant Content Availability: Teachers can easily access educational applications from the internet, making the material more varied. (3) Teacher Creativity: IFP facilities stimulate teachers to continue innovating in managing digital classes.

Inhibiting Factors: (1) Technical Constraints: Absolute dependence on electricity and internet connection (Muhlis et al., 2025:94; Aprillia et al., 2026:733). (2) Class Management: The availability of only one IFP unit in the class often triggers small disturbances because children are impatient to wait their turn. (3) Teacher Competence: There are still fears and limitations of some teachers in operating complex features. (4) Repair Costs: The school is concerned if the screen is damaged by hitting children's toys (blocks), because the cost of repairing IFP technology is very expensive (Farihah et al., 2025:67).

4) Critical Reflection on Prior Research

While the findings above are consistent with earlier studies indicating that innovative media can improve letter-recognition skills (Mustiani, 2023; Arnada, 2025; Habibah, 2022), several important differences distinguish the present study and merit closer critical reflection. Mustiani (2023) and Habibah (2022) evaluated relatively low-tech, single-modality media—flashcards and letter puzzles, respectively—whose effectiveness rested mainly on repeated visual exposure and manual manipulation; by contrast, the multisensory and multitouch nature of IFP in this study appears to accelerate letter discrimination (e.g., b–d, p–q) not merely through repetition, but through the combination of synchronized visual, auditory, and

kinesthetic feedback, a mechanism largely absent from static or single-modality media. This suggests that the outcome improvements reported across these studies may not be directly comparable, as they likely operate through partially different cognitive-perceptual pathways. Similarly, Arnada's (2025) activity-board medium relied on a fixed physical layout that limited content variation, whereas the present study found that the digital adaptability of IFP—allowing teachers to continuously vary game content—was itself a distinct contributing factor to sustained child engagement, a dimension not captured in research on static physical media. At the same time, this study's findings diverge from the broadly positive tone of prior IFP-related research (Farihah et al., 2025; Aprillia et al., 2026) by foregrounding substantial practical constraints—particularly single-unit availability creating turn-taking conflicts, and high repair costs discouraging risk-tolerant experimentation by teachers—that are less prominent in studies focused primarily on measuring learning outcomes rather than on implementation conditions. This indicates that the benefits of IFP documented in the cognitive- and language-outcome literature are not automatically realized in practice, but are conditional on classroom-level resource management and institutional readiness, an implementation dimension that remains underexamined in the existing body of research on digital media for early literacy.

4. CONCLUSION

Based on the research that has been conducted, it can be concluded that:

1. The role of teachers in stimulating alphabet recognition skills through the use of Interactive Flat Panel (IFP) media in Grade A2 children at Pembina Dewi Anjani State Kindergarten is very central. Teachers play an integrated role as multisensory learning designers who prepare materials according to the theme, play-while-learning facilitators who regulate the flow of interactive games, evaluation mediators who assess development without causing stress on children, and class managers who balance by combining screen time with conventional fine motor activities.
2. The use of Interactive Flat Panel (IFP) media provides comprehensive positive impacts, namely: (a) the impact on the development of cognitive abilities where children can remember and distinguish similar letters (such as b-d, p-q) better; (b) a drastic increase in children's focus during the learning process; and (c) the development of sensory-motor abilities through eye and hand coordination when touching and sliding digital objects on the touch screen.
3. There are both supporting and inhibiting factors in the use of IFP. Supporting factors include the availability of multitouch features, an abundance of varied digital educational content, and increased motivation for teacher creativity. Meanwhile, the main inhibiting factors are technical constraints (power outages and slow internet), classroom management challenges (students competing for turns), limited technological competence among some teachers, and high anxiety about the risk of hardware damage requiring expensive repairs.

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