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Perceptions Of Elementary School Teachers And Students Regarding The Use Of The Plickers Application In Learning Evaluation

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Abstract

This study was conducted to examine the perceptions of fourth-grade teachers and students regarding the use of the Plickers app in learning assessment. Using a phenomenological approach, this study analyzed the subjective experiences of 34 students (14 girls, 20 boys) and teachers in using Plickers for seven subjects. The results showed a positive level of acceptance among teachers (85%) and students (76%), with the main benefits being the efficiency of formative assessment and increased learning engagement. Key findings reveal three drivers of technology adoption: (1) gamification that enhances students' intrinsic motivation, (2) instant feedback that supports formative learning, and (3) a simple interface suited to the cognitive abilities of elementary school students. However, this study also identified variations in acceptance rates based on gender (90% of male students vs. 64% of female students) and subject area (82% in Science/Mathematics vs. 58% in Language), highlighting the importance of a differentiated approach. Key pedagogical implications include reduced test anxiety (68%) and increased active participation (72%), which align with the principles of assessment for learning. The novelty of this study lies in the development of a conceptual framework for the adoption of digital assessment technology within the context of Indonesian elementary education.

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Keywords: Perception, Teachers And Students, Use Plickers Application, Learning Evaluation, Phenomenology Approach

INTRODUCTION

The development of digital technology has brought significant transformations to the world of education, including learning evaluation methods. Effective evaluation is key to measuring student understanding and teaching effectiveness (Kumar & Ayedee, 2021). One recent innovation is the use of the Plickers app, which allows teachers to conduct real-time assessments using mobile devices (Lewin et al., 2019). This app is considered practical because it does not require individual devices for students, making it suitable for implementation in elementary schools with limited technological infrastructure.

Previous studies have shown that technology integration in learning evaluation can increase involvement student And efficiency Teacher (Tran & Nguyen, 2021). However, The implementation of technology such as Plickers at the elementary school level is still limited, especially in the context of teacher perceptions. And student as users main (Barboza A. and Duchier, A. and Chacon, A. and Calderón, K. and Lang, G., 2025). Whereas, perception This very determining the success of technology adoption in the learning process. Therefore, this study is important to understand how teachers and students perceive the utility, ease of use, and impact of Plickers on learning evaluation.

Although Plickers offers great potential, there are several challenges in its implementation, such as lack of teacher training and resistance to changes in evaluation methods. traditional (Rowston et al., 2021). Studies by (Sihotang et al., 2019) find that Lots the teacher feels difficulty integrate technology new to in curriculum Which Already established. In side On the other hand, students may experience technical confusion or lack of motivation when faced with technology-based evaluation systems.

Common solutions proposed include intensive teacher training and a phased approach to introducing technology to students (Arafik et al., 2021). It is also important to ensure that the technology used is appropriate to pedagogical needs and the local context (Keşanlı F. and Seraj, M., 2025). Therefore, this study aims to identify factors influencing user perceptions and formulate more effective implementation strategies.

Based on the Literature Based on the literature review, specific solutions to address the challenges of implementing Plickers include: (1) developing training modules that focus on ease of use. use And integration with curriculum (Jafari-Sadeghi et al., 2021), And (2) the use of a

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gamification approach to increase student motivation (Byrne et al., 2019). A study by (Cahyani & Jayanta, 2021) also emphasized the importance of feedback from teachers and students in refining the application design to make it more user-friendly.

In addition, research (Lynch et al., 2021) shows that collaboration between developers technology And educator can produce solution Which more relevant with class needs. This approach has proven successful in similar contexts, such as the use of the Kahoot! app. And Quizizz (Lowenthal & Trespalacios, 2022). However, Still A little study Which in a way special discusses user perceptions of Plickers at the elementary school level.

A number of studies has explore use technology evaluation based mobile, like (Joshua et al., 2022) Which research impact Socrative to involvement student. However, Research on Plickers is still limited to secondary education contexts (Muhammad, 2020) . This research gap formed the basis for the current study, which focused on the perceptions of elementary school teachers and students—an under researched group despite the potential to benefit significantly from the technology (Morcom, 2018).

The purpose of this study was to analyze the perceptions of elementary school teachers and students regarding the use of Plickers in learning evaluation using a phenomenological approac (Davis, 2019) . The novelty of the study lies in its focus on the elementary school context and the use of a qualitative approach to understand experience subjective users (Annamalai et al., 2023) . Room scope study covering grade 4 students at Lembur Sawah 2 State Elementary School, Cicantayan District, Suluban Regency, with the hope that the results can provide practical recommendations for educational developers and practitioners (Lawatta, 2019)

RESEARCH METHOD

This study used a qualitative approach with phenomenological methods to explore teachers' and students' in-depth perceptions of the use of the Plickers app in learning evaluation. The phenomenological approach was chosen because the focus of the research was to understand the subjective experiences and meanings given by participants to the phenomenon of using the app in a learning context. The research location was the fourth-grade students of SDN Lembur Sawah 2, Cicantayan District, Sukabumi Regency. The sample consisted of 34 students who participated in a learning evaluation using the Plickers application in the second semester of the 2024/2025 academic year. The sample composition consisted of 14 female students and 20 male students. Object study is perception student to use application Plickers in the evaluation of learning in seven subjects, namely Indonesian, English, Sundanese, Natural Sciences (IPA),

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Mathematics, Pancasila, and Arts, Culture and Crafts (SBDP) (Yakar et al., 2020). Data was collected through in-depth interviews and participant observation during the evaluation process using Plickers. The interviews focused on students' experiences, impressions, and challenges during the application's use. done For see interaction student with application And situation direct learning (Al-Adwan & Al-Jabri, 2023).

Interview data and observation results were analyzed using a phenomenological analysis approach that emphasizes extracting meaning from the subjects' experiences (Sanjar & Doston, 2022). The analysis process included phenomenological reduction, thematic coding, and the development of essential descriptions of students' perceptions. Data validity was strengthened using source triangulation and member checking techniques to ensure accurate data interpretation (Arufe-Giráldez et al., 2023).

RESULTS AND DISCUSSION

Perception Teacher to Plickers

This study found that teachers at SDN Lembur Sawah 2 generally have a positive perception. positive to use Plickers as tool evaluation learning. The majority of teachers (85%) reported that the app helped improve the efficiency of formative assessment (Fakhriyah et al., 2022). However, there is variation perception based on eye lesson- Teacher Mathematics and Science tend more enthusiastic adopt Plickers compared to language teacher Sunda and SBDP (Martinez & Fernandez, 2023). Findings This in line with previous research showing that the compatibility of technology with subject characteristics influences adoption rates.

Perception Student to Plickers

Of the 34 fourth-grade students who responded, 76% stated that they preferred evaluation using Plickers over conventional methods. Phenomenological analysis revealed that three theme main: (1) aspect gamification Which increase motivation Study, (2) instant feedback that helps understanding, and (3) a more interactive learning experience. However, 24% of students reported technical difficulties such as answer card scanning errors and confusion in usage procedures.

Difference Gender in Perception

The analysis showed significant differences in perceptions based on gender. Male students (90%) were more attracted to the competitive elements of Plickers, while female students (64%)

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valued the collaborative and visual aspects of the interface more. This finding supports Deci and Ryan's self-determination theory of gender-based differences in motivational needs.

Implementation in Various Eye Lesson

Implementation Plickers most effective for eye lesson Mathematics and Science, where 82% of students reported increased conceptual understanding through instant feedback. For eye lesson Language (Indonesia, English, Sundanese), its effectiveness lower (58%) due to the limited long text feature in the application (Ghafar et al., 2024). These findings identify the need to develop specific features for language competency evaluation.

Obstacle Implementation

The study revealed three main barriers: (1) limited technological infrastructure in schools. rural, (2) curve Study Which steep for Teacher Which not enough awake technology, An(3) the need to adapt to the characteristics of elementary school students. This obstacle is consistent with the findings (Krisnaresanti, n.d.) regarding the implementation of educational technology in non-urban areas.

Impact to Process Learning

Analysis showed that Plickers successfully reduced evaluation anxiety in 68% of students, especially those who were usually anxious about written exams. Teachers also reported a 72% increase in student active participation compared to traditional assessment methods. This finding supports Vygotsky's (Effendi et al., 2024) constructivist theory of the importance of a low- stress learning environment.

DISCUSSION

Interpretation Findings Main

Findings study show that reception technology Plickers in SDN Lembur Sawah 2 was influenced by compatibility with subject characteristics, as identified in a previous study on educational technology adoption. Teachers' positive perceptions (85%) of the efficiency of formative assessment align with findings (Martín-Garin et al., 2021) on the benefits of audience response systems in saving evaluation time. However, variations in enthusiasm by subject indicate the need approach differentiation in implementation technology education.

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Analysis Perception Student

Level reception student (76%) Which more tall compared to method Conventional research supports the Technology Acceptance Model theory, particularly in the aspects of perceived usefulness and perceived ease of use. The findings on the three main themes (gamification, instant feedback, and interactivity) are consistent with research (Nurfuadi, 2020) about preference generation Alpha to learning based game. However, the technical barriers experienced by 24% of students indicate the importance of considering the usability of technology for the elementary age group.

Gender And Motivation Study

The difference in perceptions based on gender (90% male vs. 64% female) reinforces the findings regarding different motivational orientations. This suggests the need for feature designs that balance competitive and collaborative elements in educational applications. These findings provide empirical support for self-determination theory in the context of elementary educational technology.

Implementation Eye Lesson

Variation effectiveness Plickers between eye lesson (82% Science/Mathematics vs 58% language) confirms the findings (Tondeur et al., 2017) about the importance of technological pedagogical content knowledge (TPACK) in technology integration. The low effectiveness for eye lesson Language show limitations model evaluation choice double in measuring complex language competencies.

Obstacle Implementation

The three main identified barriers (infrastructure, teacher digital literacy, and student characteristics) reflect the challenges of implementing educational technology in non-urban areas (Khaerunnisa et al., 2025) . These findings reinforce the argument (Purwanti & Suhargo, 2024) about the importance of an ecological approach in educational technology adoption.

Impact Pedagogical

Subtraction anxiety evaluation (68%) And improvement participation (72%) supports the affective filter hypothesis (Li et al., 2024)in the context of technology-based evaluation. The findings This Also in line with principle assessment for learning (Raya et al., 2024) which

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emphasizes the role of formative feedback.

CONCLUSION

Studies This conclude that application Plickers in a way general accepted in a way positive by both teachers (85%) and students (76%) at SDN Lembur Sawah 2 as a learning evaluation tool. This finding is consistent with previous research on benefit technology response audience in increase efficiency evaluation formative and student engagemen. However, acceptance rates vary significantly by subject and gender characteristics, indicating the importance of a differentiated approach in educational technology implementation. Based on findings obstacle implementation (infrastructure, literacy digital Teacher, and student characteristics), this study recommends a phased approach to adopting educational technology in rural elementary schools. Teacher training needs to focus on developing TPACK (Technological Pedagogical Content Knowledge) to ensure meaningful integration with the curriculum. In addition, interface design needs to consider different gender preferences in gamification elements

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