Kapin (Smart Card) Media: Evaluating Learning Tools Efficacy to Improve Reading Skills of Second Grads

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ABSTRACT

In the context of classroom learning, particularly at the elementary school level, various methods are employed. This study aims to achieve three key research objectives: (1) to establish the reliability of Chapin learning media, (2) to ensure its effective implementation, and (3) to assess its overall efficacy. The research methodology utilized the Research and Development (R&D) approach, following the Addie development model, consisting of five stages: Analysis, Design, Development, Implementation, and Evaluation. The study's population consisted of 12 students from Class II at SDN Tiron III and 23 students from Class II at SDN Tiron IV. Data collection involved the use of validation questionnaires for media, content, and learning specialists, supplemented by both small- and large-scale experiments. Data analysis encompassed validity testing, practicality assessment through teacher response questionnaires (involving 2 teachers and 35 students), and effectiveness evaluation based on students' learning outcomes, analyzed using the N-Gain Score. The results of this study indicate that the smart card learning media achieved a high level of validity, with percentages of 90%, 84%, and 84% for content, media, and overall validity, respectively. Furthermore, the practicality assessment revealed that students' responses averaged 88%, while expert teacher responses averaged 84%. The N-Gain score, with values of 0.77 for the wider class scale and 0.79 for the limited class scale, both fall into the high category, demonstrating the efficacy of the learning media.

1. Introduction

The elementary education landscape is both intricate and captivating, focusing on the enrichment of young minds. Educators and scholars are deeply engaged in pedagogical innovations, aiming to transform the delivery and absorption of knowledge. Central to this mission is the Knowledge Process framework, a critical tool for analyzing and refining teaching and learning materials. This framework not only facilitates engaging, supportive, and inspiring educational experiences but also extends beyond the confines of traditional Multiliteracies pedagogy. In this context, the role of an engineering educator is crucial. They must possess seven key attributes to guide students through the Teaching-Learning process effectively, catering to their educational, experiential, and emotional needs (Rowland, 2015; Sandoval-Obando et al., 2018; Shailaja, & Lakshmi, 2020).

Education plays a vital role in developing skills and fostering critical and interactive thinking. Teachers must adapt to their students' realities and needs (Martins et al., 2018). In online learning, the teacher's presence significantly enhances the perception of a learning community across diverse demographics (Shea et al., 2006).

Moreover, the shift from traditional teacher-centered methods to learner-centered approaches, through active, inductive instruction, has improved engagement and learning outcomes (Smart et al., 2012). A key element in this educational evolution is the strategic use of multimedia resources. Thoughtful integration of these resources into teaching strategies can optimize learning experiences, requiring educators to judiciously choose suitable media for effective knowledge transmission and sustained student engagement.

The impact of learning media is not just theoretical but empirically proven. Research has demonstrated its transformative effects on education, including enhancing thematic learning outcomes (Azizah & Alnashr, 2022), fostering curiosity and motivation, and creating a psychologically rich learning environment (Arsyad, 2011). These findings align with Jean Piaget's cognitive development stages, illustrating the varied cognitive needs of children at different ages (Wakhidatul, 2016).

Central to the realm of essential skills that every student must master is the art of reading (Wandasari, 2017). Proficiency in reading is not merely a scholastic requirement but an indispensable life skill. The contours of our daily existence are intricately woven with the threads of reading, rendering it an indispensable activity (Wiyati, 2018). Furthermore, reading assumes a pivotal role as one of the four foundational language skills and constitutes a crucial facet of written communication (Jahrir, 2020). Its significance lies in its ability to unlock the doors to diverse information and insights ensconced within the written word (Tri Astutik et al., 2021).

The acquisition of reading skills is a dynamic process that spans various stages. As young minds embark on their educational journeys, they transition through the sensorimotor stage (0-2 years), preoperational stage (2-7 years), concrete pre-operational stage (7-11 years), and ultimately, the formal operational stage of education (7-15 years) as outlined by Piaget (Wakhidatul, 2016). At each juncture of this developmental trajectory, the cultivation of reading skills assumes paramount importance.

However, the cultivation of proficient reading skills is not a passive occurrence. It demands structured and systematic interventions that allow students to engage with the written word in a manner that is both purposeful and enjoyable. To unlock the full potential of reading activities, educators and learners alike rely on a spectrum of learning media that serve as indispensable tools or aids in the effective communication of knowledge (Nurrahman et al., 2022). In the mosaic of educational resources, one form of learning media has emerged as particularly promising: Smart Card Media.

Smart Card Media, a visual learning medium, occupies a pivotal place in the pantheon of educational tools (Permatasari et al., 2020). Its unique characteristics make it a versatile instrument capable of transforming the learning environment and kindling students' fervor for refining their reading prowess. These dynamic cards not only afford students hands-on, exploratory learning experiences (Miskiyah & Safitri, 2023; Frasandy et al., 2022; Surahmadi, 2016) but also foster collaboration and interaction among students, thus amplifying the richness of the learning process.

Empirical studies by (Sari, 2022; Susanti, 2018) underscore the efficacy of Smart Card media in augmenting students' reading abilities. The innovative learning tool serves as a gateway to experiential learning, offering students the opportunity to explore, discover, and apply their knowledge in real-world contexts (Windiastuti et al., 2014). As such, it emerges as a catalyst for heightened student engagement and superior learning outcomes, thus transforming the educational landscape.

Moreover, the use of Smart Card media not only fosters individual learning but also engenders a spirit of collaboration among students (Miskiyah & Safitri, 2023). As students collectively engage with Smart Card media, they tap into the potential for peer learning and collaborative problem-solving, enhancing their academic achievements (Frasandy et al., 2022). The findings of (Frasandy et al., 2022) and (Surahmadi, 2016) lend further credence to the premise that Smart Card media can serve as a powerful catalyst for academic success.

In essence, Smart Card media represents a potent visual learning medium, tailor-made for the dynamic landscape of education. It not only adds a playful dimension to the learning experience but also unleashes the creative and innovative potential within each student (Permatasari et al., 2020). The infusion of Smart Card media into the educational milieu serves to enliven the learning atmosphere, stoke students' enthusiasm, and capture their undivided attention (Permatasari et al., 2020).

Multimedia is a powerful tool in effective teaching and learning processes, enhancing multi-sensory stimulation and interactive control for students. (Trelease, 2008). Within this framework, Smart Card media can be seamlessly integrated into the educational repertoire by incorporating gamification elements. By aligning the choice of games with students' unique characteristics, educators can foster immersive learning experiences that mirror real-world events, facilitating direct interaction with teachers, communities, and the environment. Smart Card media offers a distinct advantage by presenting abstract concepts in tangible and relatable ways, thereby bridging the gap between the abstract and the concrete (Permatasari et al., 2020).

However, despite the promise and potential of Smart Card media, there exists a noteworthy gap in the literature a void that calls for scholarly exploration. The current body of research has yet to comprehensively address the practical application and the depth of impact that Smart Card media can have on enhancing students' reading proficiency. This study is poised to bridge this chasm by meticulously designing and evaluating the reliability, applicability, and efficacy of the Smart Card learning medium. In doing so, it aspires to unlock new horizons in elementary education, enhance the reading capabilities of young learners, and contribute valuable insights to the realm of educational pedagogy.

2. Literature Reviews

Media serves as a crucial tool in the learning process, facilitating the effective conveyance of messages (Qorimah et al., 2022). Among the myriad forms of educational media, card media stands out as a tangible resource comprising images and text that aids in conveying and developing subject matter

comprehension (Fakhriyah et al., 2014). Moreover, smart card media emerges as a potent learning instrument, amplifying the learning experience (Surahmadi, 2016). The utilization of card media has been associated with improvements in learning outcomes, motivation, and cognitive skills (Pertiwi et al., 2019). Consequently, cards have gained prominence in the educational milieu. This notion is supported by research findings (Sungkowati, 2012) that underscore the effectiveness of word card games in enhancing children's reading development. Additionally, card media serves as an alternative approach to teaching Indonesian language and fostering initial reading skills among first-grade elementary school students (Rumidian & Sumanto, 2017).

The presence of media within the learning process assumes paramount importance, as it serves as an intermediary that elucidates complex subject matter (Arsyad, 2011). Its introduction into the learning environment is expected to foster interactive patterns of communication between teachers and students, transcending one-way communication to embrace reciprocal dialogue. Despite the array of learning media available, the practical implementation in MI/SD (Islamic Elementary School and Elementary School) settings often falls short of anticipated outcomes. In practice, many educators continue to rely on traditional teaching methods, employing blackboards and thematic images from student books. This teacher-centric approach can inadvertently dampen student enthusiasm, leading to passive participation and disinterest in the learning process (Observation, September 2021).

According to Juliana et al. (2020), the integration of learning media simplifies the teaching and learning process by enhancing the clarity and comprehensibility of communicated content. For subjects like arithmetic, the use of learning media proves particularly advantageous, rendering complex concepts more accessible to students. Innovative and artistic tools, such as smart cards, inject an element of engagement and excitement into the learning experience.

Play, as a favored pastime among children, holds inherent appeal. Suryana (2021) posits that play is a natural, enjoyable, and adaptable activity. Further Triharso (2013) emphasizes that play can be both tool-aided and tool-independent, fostering enjoyment and engagement. Integrating play into learning not only ignites students' passion for the subject but also enhances content comprehension. Smart card media, in this context, emerges as a versatile tool for supplementing learning.

To address these gaps in the literature, this study aims to investigate the efficacy of smart card media in enhancing students' reading proficiency. By leveraging the game-based attributes of smart cards, educators can potentially create engaging learning experiences that bridge the gap between abstract concepts and tangible understanding. Furthermore, this study seeks to explore the flexibility and adaptability of smart card media as a versatile educational resource, enabling various types of interactive learning activities. The research will investigate the impact of smart card media on student engagement, motivation, and learning outcomes, ultimately contributing to the broader discourse on effective learning strategies in elementary education.

3. Method

In the course of this research, Research and Development (R&D) methods were employed to create effective educational resources, as advocated by Saputro (2017: 8). The research followed the ADDIE approach, a systematic instructional design model. The ADDIE model consists of five distinct stages, namely the Analysis stage, Planning stage, Development stage, Validation stage, and Evaluation stage. The research was conducted within the precincts of SDN Tiron III and SDN Tiron IV, situated in the Banyakan District of Kediri Regency. The research spanned from June 12, 2023, to June 22, 2023. The study encompassed a limited-scale trial involving 12 students at SDN Tiron III, as well as a broader test conducted with 23 students at SDN Tiron IV. Data collection techniques included meticulous observation and the distribution of questionnaires aimed at understanding the needs of both teachers and students.

3.1 Data Analysis

Quantitative data analysis was the chosen method for this study, primarily focused on assessing the quality and validity of the learning media. The analysis involved several tests designed to ascertain the efficacy of the learning materials.

3.1.1 Analysis of Learning Media Validation Test

To evaluate the quality of the learning media, an analysis of the validation test was conducted. This analysis entailed the assessment of validation findings provided by experts in the fields of media, content, and learning. The evaluative process involved categorizing the outcomes into distinct categories, including "very suitable," "suitable," "moderately suitable," "less suitable," and "not suitable." The evaluation was based on the collective input from these experts. The assessment followed this methodical approach:

$$\text{Product validation test score} = \frac{\text{NS}}{\text{MS}} \text{ X } 100\% = ...\%$$

Description:
NS = number of scores
MS = maximum score

Validity standards must be met to reinforce the assessment data, as shown in the table 1:

Table 1. Criteria for product validity and revision

Achievement level (%)	Qualification	Description
$76 \leq X \leq 100$	Very good	No need for revision/very valid
$51 \leq X \leq 75$	Good	No need for revision/valid
$26 \leq X \leq 50$	Simply	Revised/quite valid
$0 \leq X \leq 25$	Less	Revision / less valid

3.1.2 *Analysis of learning media practicality test*

Data analysis of practical results by teacher and student responses to learning media is carried out by finding the average validator assessment. Giving scores to determine the results of validation using categories (4) very suitable, (3) suitable, (2) less suitable, (4) not suitable The formula used is as follows:

Product validation test score= $\dfrac{NS}{MS}$ X 100% =......%

Description:
NS = number of scores
MS = maximum score

Table 2. Criteria for practicality and product revision

Achievement level (%)	Qualification	Description
$76 \leq X \leq 100$	Very good	No need for revision/very practical
$51 \leq X \leq 75$	Good	need for revision/practical
$26 \leq X \leq 50$	Simply	Revised/practical enough
21-40	Less	Revision / less practical
$0 \leq X \leq 25$	Very Less	evised/very less practical

3.1.3 *Learning media effectiveness test analysis*

The effectiveness of learning media is then evaluated for reading proficiency using completed pretest and posttest questions. Through the examination of N-gain Scores, it will be possible to determine how much reading ability has improved. The increase between the pretest and posttest scores will be calculated. The following is the N-gain equation:

N-Gain = Posttest score-prettest score
Maximum value-prettest score

The N-gain score is the best way to determine whether a therapy is working because it is one of the techniques used to compare the outcomes of the first and final tests. The criteria in the table are used to understand the N-gain calculation results:

Tabel 3. *N-gain* score criteria

Percentage	Category
N-gain > 0.70	High
0.70 > *N-gain* > 0.30	Medium
N-gain < 0.30	Low

The percentage results obtained are then interpreted based on the provisions in the table below:

Tabel 4. *N-gain* score criteria

Percentage	Category
< 40	Ineffective
40-55	Less effective
56-75	Effectiveenough
>76	Effective

4 Result

The primary objectives of this research endeavor center around the creation of educational media. The process entails envisioning this media as a crucial instrument for educators, aiding in the effective conveyance of information throughout the learning journey. This systematic approach involves the sequential implementation of the ADDIE stages, which are delineated as follows.

4.1 Analysis Stage

The analysis stage was initiated by surveying the needs of both educators and students. The examination of these requirements revealed that traditional teaching methods, primarily lecture-based, continue to dominate classroom instruction.

Unfortunately, this approach fails to effectively stimulate student motivation, especially during experiential learning activities. Furthermore, educators predominantly rely on text-based resources, resulting in limited and less impactful material delivery. Additionally, students often find the Indonesian language classes unengaging and dull. Following this initial assessment, the core skills, fundamental competencies, and performance indicators derived from the essential requirements were thoroughly examined. The insights gleaned from this analysis served as the foundation for subsequent stages of planning and development.

4.2 Design

The design phase involved the creation of visually appealing learning media for KAPIN (Smart Cards). To craft KAPIN media, the team selected relevant content and materials, followed by utilizing Microsoft Word 2013 and Canva applications for its production. During this stage, meticulous attention was given to the selection of colors, backgrounds, and fonts to ensure optimal clarity and visibility for students engaging with the media. KAPIN comprises cards containing object names and corresponding object characteristics. Each card includes a cover with the title and class designation, a preface, essential competencies, performance indicators, and instructions for using the Smart Card media.

4.3 Development Stage

The development stage represents a pivotal juncture in the evolution of the KAPIN media. During this critical phase, our objectives encompassed two crucial facets: (1) harnessing the potential of the Canva application and Microsoft Word 2013 to craft the media, and (2) conducting an exhaustive validation test aimed at scrutinizing the suitability and effectiveness of the developed media for educational purposes.

In meticulous fashion, we embarked on the creative journey of constructing 36 cards, each meticulously portraying object forms, along with an additional 18 cards delving into the intricate details of object characteristics. Employing the versatile tools of Canva and Microsoft Word 2013, we ensured that these visual components were not just informative but also aesthetically pleasing. The materials were then translated into tangible form by printing them on Art Paper 310. To provide a visible and organized representation, a wooden board measuring 70 x 90 cm was instrumental in displaying object names and their corresponding characteristics.

Before proceeding to the crucial phase of field testing with students, we subjected the developed media to a rigorous validation process. This pivotal step involved engaging experts from diverse fields, including material specialists, media experts, and education specialists. Their collective expertise contributed to a multifaceted assessment aimed at ensuring the media's viability and overall validity in the realm of education.

The validation process meticulously evaluated various aspects, including the presentation, visual appeal, and the media's capacity for effective conveyance of information. These results are meticulously presented in the following table:

Table 5. Media Expert Results

No	Aspect	Media Expert Score
1	Presentation	10
2	Visual Appeal	29
3	Countability	21
	Total Score	60
	Maximum Score (72)	
	Score Percentage	83%
	Criteria	**Very Valid**

According to our established criteria, if the percentage results fall within the range of 81% to 100%, the learning material is deemed not only valid but also requires no further adjustments. Under these criteria, the findings of the media expert validation paint a compelling picture, showcasing a commendable score of 60 and an impressive accuracy rate of 84%. This categorizes the Kapin (Smart Card) medium as highly valid, emphasizing its potential and effectiveness as a robust educational tool. Moreover, we sought to gauge the quality of content, execution, and presentation based on the evaluation conducted by material experts. The comprehensive results of this material expert validation are summarized in the following table:

Table 6. Material Expert Results

No	Aspect	Media Expert Score
1	Content Quality	16
2	Applicability	9
3	Feasibility of Presentation	15
	Total Score	40
	Maximum Score (44)	
	Score Percentage	90%
	Criteria	**Very Valid**

Once again, the validation results echo a resounding affirmation of the Kapin (Smart Card) medium's exceptional validity and suitability for educational use. With a score of 40 and an accuracy rate of 90%, it is evident that the Kapin medium aligns seamlessly with the highest standards of educational quality, ensuring an enriching and effective learning experience.

Similarly, the validation process extended to learning experts, encompassing an assessment of presentation and learning tools. The comprehensive results of this learning expert validation are laid out in the following table:

Table 7. Learning Expert Results

No	Aspect	Media Expert Score
1	Presentation	10
2	Learning Device	27
	Total Score	37
	Maximum Score (44)	
	Score Percentage	84%
	Criteria	**Very Valid**

In this segment of validation, the results manifest a score of 37, accompanied by an accuracy rate of 84%. This resounding validation further underscores the Kapin (Smart Card) medium's exceptional suitability for educational purposes.

In summation, the exhaustive validation processes, spanning a spectrum of expertise, bear witness to the exceptional validity and suitability of the Kapin learning media for educational use. These comprehensive validations firmly establish that the produced Kapin medium not only meets but exceeds the highest standards of quality and effectiveness, promising an enriching and transformative learning experience for students.

4.1 Implementation stage

Following the thorough validation and approval for use in the teaching and learning process, the subsequent step is the implementation stage. This phase involves exposing second-grade students from both SDN Tiron III and SDN Tiron IV to the developed KAPIN media. In this stage, 11 second-grade students from SDN Tiron III participated in the small trial group, while 23 students from the second grade at SDN Tiron IV were part of the larger-scale trial group.

4.2 Evaluation Stage

The evaluation stage marks the final phase in the ADDIE development process. At this juncture, the focus shifts to assessing the practicality and efficacy of KAPIN media in actual learning settings. To gauge its effectiveness, teacher and student questionnaire responses are analyzed. Additionally, the N-gain Score, which compares pre- and post-test results, is utilized to measure the media's overall efficacy.

Both instructor response questionnaires and student response questionnaires are employed to comprehensively evaluate the impact of media application. Furthermore, a pre-test and post-test were conducted to assess the media's effectiveness in enhancing students' reading abilities. This trial allowed us to observe how the newly created learning tool performed in a real educational environment.

In terms of the appropriateness of the rules governing the completed learning media, if the percentage results fall within the range of 81% to 100%, it signifies that the media meets the criteria for validity and does not require further adjustments. Accordingly, the results of the response surveys from two educators are deemed the outcome of the typical response, with a score of 44 and a commendable 84% rating, placing the KAPIN (Smart Card) media in the highly practical category. Similarly, the student response survey, with a score of 38 and an 88% rating, confirms the high effectiveness of the KAPIN media without any need for revisions.

The approval of KAPIN learning media marks its readiness for utilization as an effective learning tool for second-grade students at both SDN Tiron III and Tiron IV. These findings align with the outcomes of prior research, such as Giwangsa's (2021) study titled "Card Media Improvement in Primary School Social Examinations Learning" , where students' responses exceeded 90%, categorizing the media as "highly practical." This reinforces the notion that card media can serve as an invaluable learning resource in schools, as indicated in the study conducted by Ismail et al. (2020). Furthermore, Izza's (2018) research, titled "Development of card learning media on cultural diversity in Indonesia class IV MINU Raudlatul Falah Talok Malang" , supports the idea that KAPIN material has the potential to enhance students' reading abilities.

The assessment of the effectiveness of the KAPIN media involves the examination of pre-test and post-test questions, employing the N-gain Score. The pre-test is administered before the introduction of the media, while the post-test is conducted afterward. This approach allows us to evaluate the impact of KAPIN on students' reading abilities, in line with the N-gain score algorithm utilized by Triutami et al. (2014).

The N-Gain Test is a crucial tool for evaluating the efficacy of Kapin media. To assess its effectiveness, a paired sample t-test was conducted, preceded by a normality test, as shown in Table 8.

Table 8. Normality Table

Tests of Normality	Kolmogorov-Smirnova	Shapiro-Wilk
Statistic	df	Sig.
PreTest Wide scale	0.124	12
PostTest Wide scale	0.208	12
PreTest Limited scale	0.190	12
PostTest Limited scale	0.188	12

The results of the normality test, conducted using the Shapiro-Wilk method, are provided due to the relatively small sample size of 35 students, with 12 students in the limited scale and 23 students in the wide scale. The significance levels (sig) for pretest and posttest scores in both the broad-scale and limited-scale classes were all greater than 0.05, indicating normal distribution. Consequently, it can be concluded that the smart capins-based learning media can be used effectively.

Table 9. Paired Samples Test

Paired Samples Test	Mean	t	df	Sig. (2-tailed)
Pair 1	PreTest Eks - PostTest Wide scale	-44.56522	-18.018	22
Pair 2	PreTest Kontrol - PostTest Limited scale	-52.50000	-14.317	11

The paired test results (t) were calculated with 22 degrees of freedom, yielding a t-table value of 2.074. The analysis using SPSS revealed that the t-count was 18.087, with a significance value of 0.000. Therefore, it can be concluded that the t-count exceeds the t-table value, and the significance value is less than 0.05. This implies that the null hypothesis (H0) is rejected in favor of the alternative hypothesis (Ha), indicating that there are indeed differences in students' learning outcomes before and after using the Kapin learning media. Additionally, the Sig.(2-tailed) value is 0.000, confirming that the Kapin media effectively improves reading skills.

Table 10. N-Gain Results

Class	Mean	Minimum	Maximum
Limited scale	79.5437	58.33	100
Wide scale	77.8272	33.33	100

Following the T-test, the N-gain Score test was performed to assess the effectiveness of the implemented learning media. An N-gain exceeding 0.70 is categorized as highly effective. The N-gain analysis yielded an average score of 0.77 for the wide-scale class and 0.79 for the limited-scale class, both indicating high effectiveness. In conclusion, the developed Kapin (Smart Card) media has proven to be highly effective for educational use.

5 Discussion

This research embarked on the systematic development of Smart Card learning media, guided by the ADDIE model which involves a sequence of analysis, design, and development stages (Branch, 2009). The innovation lies in the creation of a bespoke Smart Card learning media, conceived and crafted by researchers with the specific objective of enhancing the teaching process.

5.1 Analysis Phase

The initial analysis phase involved gathering data through questionnaires to assess the needs of teachers and students. This stage revealed a significant reliance on traditional lecture methods in classrooms, leading to low student engagement and a lack of stimulation in learning motivation. Teachers predominantly used

book-centered resources, highlighting a gap in the use of diverse and interactive learning media. The absence of varied educational tools resulted in ineffective material delivery and diminished student interest, particularly in Indonesian language studies, which were perceived as monotonous (Parinduri et al., 2022). This phase was crucial in identifying the core competencies and developing basic competencies and indicators for the next stages.

5.2 Design Phase

In response to these findings, the design phase was initiated, focusing on creating an engaging Smart Card learning media. This stage involved selecting appropriate content, applications, and design elements such as colors, backgrounds, and fonts to ensure the Smart Card's visibility and attractiveness to students. The Smart Card, named KAPIN, features object names and their characteristics, along with clear instructions and educational goals. This design strategy was aimed at making the learning process more interactive and appealing to students.

5.3 Development Phase

The development phase centered on the practical creation of the KAPIN media using Microsoft Word 2013 and Canva. This phase also included the validation process, where material, media, and learning experts evaluated the media's feasibility in educational settings. The validation process was comprehensive, involving rigorous scrutiny by experts such as Sutrisno Sahari, M.Pd. The feedback from these evaluations led to refinements in the Smart Card, further enhancing its educational value. The Smart Card, comprising various elements like shape cards and instructional boards, was designed with a focus on facilitating an interactive learning environment. The validation results, showing scores between 84% to 90%, categorized the Smart Card media as highly valid and practical, indicating its potential to significantly improve teaching and learning processes (Permatasari et al., 2020; Hijriyah et al., 2022). The practicality of the media was further supported by positive responses from teachers and students, suggesting its effectiveness in elementary school settings (Sexcio & Dafit, 2022).

5.4 Research Novelty

This research introduces a novel approach that seeks to fill the voids left by traditional teaching methodologies. By weaving together advanced technology and inventive design elements in educational media, it marks a significant departure from the standard textbook-dominated model of instruction. The introduction of the Smart Card is a pivotal development in this transition, offering an interactive and captivating learning resource. This tool is meticulously tailored to cater to the unique requirements of educators and learners alike, heralding a new era in educational practices

5.5 Result Implications

The implications of this study are substantial for the field of educational technology. The success of the Smart Card media in improving student engagement and learning outcomes suggests a promising direction for future educational media development. It underscores the importance of custom-designed educational tools that align with the specific needs and interests of learners.

5.6 Future Recommendations

Moving forward, it's advised to extend these methods to different subjects and educational levels. Future research should investigate integrating advanced technologies like augmented reality into learning experiences. Longitudinal studies are also suggested to evaluate the long-term effects of such media on student performance and motivation. Crucial to this effort is collaboration with educators and technologists to ensure these tools meet evolving educational and technological needs. In summary, the Smart Card exemplifies the transformative impact of well-crafted educational technology, setting a new benchmark in media design with its focus on user needs and expert validation, promising improved learning outcomes and engagement in diverse educational contexts.

6 Conclusion

This This research has successfully validated the Kapin (Smart Card) media as an impactful educational tool, with its effectiveness proven in diverse classroom settings. The high N-gain Scores of 0.77 and 0.79 from pretest and posttest evaluations categorize it as highly effective. A standout innovation in this research is the use of a 70 x 90 cm wooden box board within the Smart Card media, which significantly enhances the interactive learning experience by vividly displaying the names and characteristics of various objects. This feature plays a key role in the media's effectiveness.

The research was aimed at assessing the validity, practicality, and effectiveness of the Kapin learning media. It emerged with high validation scores – 84% from material experts, 90% from validity experts, and 84% from learning experts, all indicating a 'very valid' rating. Its practicality was further confirmed by an average score of 88% from a group of 2 teachers and 35 students, categorizing it as 'very practical'. These scores underscore the Smart Card media's ease of use and relevance in educational contexts. In conclusion, the Smart Card (Kapin) learning media stands out as not only innovative and unique but also as an effective tool in enhancing educational experiences. Its high scores across validity, practicality, and effectiveness metrics solidify its position as a valuable asset in modern educational environments.

7 Acknowledgement

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