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The Use of Animation Media for the Understanding of the Concept of Letter Recognition in Early Childhood

Ainun Marhamah[a], Wahira[b]*, Andi Asrifan[c], Herlina[d]

[3abcd] *Early Childhood Education, Postgraduate University of Makassar, Indonesia*
**Corresponding author: wahira@unm.ac.id*

Abstract

Purpose – Early childhood literacy serves as a vital foundation for academic success, yet traditional teaching methods often struggle to maintain engagement and clarity in letter recognition. This study investigates the influence of animation media on children's conceptual understanding of letters, specifically focusing on visual shapes, names, and phonemic sounds.

Design/Methodology/Approach – The research employed a pre-experimental one-group pretest-posttest design involving children aged 4–6 years. Data were collected through quantitative letter recognition tests and qualitative teacher observations and questionnaires. The study utilized data triangulation—combining performance scores with behavioral observations—to ensure a comprehensive analysis of the media's impact.

Findings – The findings indicate a significant improvement in early literacy skills following the intervention. Before the treatment, children demonstrated low baseline scores, particularly in distinguishing mirror-image letters (e.g., b–d, p–q) and consistent phonetic naming. After learning through animation media, children showed a marked increase in visual recognition accuracy and verbal confidence. Qualitative data revealed that the classroom atmosphere became more conducive to learning, with children showing higher levels of enthusiasm and sustained attention compared to conventional methods.

Originality/Value – The results demonstrate that animation media effectively bridges the gap between abstract symbols and concrete cognitive understanding by providing multisensory stimulation. Unlike generic entertainment content, the structured instructional design of the media used in this study successfully balanced digital engagement with pedagogical goals. This study concludes that animation media is a feasible, relevant, and effective tool for early childhood education, serving as a practical reference for educators to modernize literacy instruction.

Keywords: Animation Media; Understanding Concepts; Letter Recognition, Early Childhood

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I. INTRODUCTION

The importance of language development as a fundamental aspect in Early childhood education, which is the basis for future skills in literacy, communication and social interaction, it is one of the most important aspects in teaching children. Early Childhood is in the Golden Age, when their language skills are closely related to their cognitive, emotional, and social development. At this stage, the child begins to learn about symbols, understand words, and relate written language to visual representations, such as illustrations or images (Barton & Broekhuizen, 2022). Letter recognition, vocabulary, and language structure are taught to improve children's phonological awareness, which is the basis for learning to read and write (Gonzalez et al., 2020). Problems in teaching letters in early childhood often arise from the methods and media used by school teachers. Conventional teaching methods are quite effective in making children bored and unable to understand the material being taught. This is based on research by Rahmani and Mayar (2023) which shows that the media used by teachers is less interesting and cannot provide fun educational materials for children, especially in early childhood education. Problems in letter recognition in early childhood often arise from the methods and media used by school teachers. Conventional teaching methods are quite effective in making children naïve and unable to understand the material being taught.

This condition is strengthened by the results of research by Rahmani and Mayar (2023) who found that the media used by teachers is not interesting enough and has not been able to build a pleasant learning atmosphere for early childhood, especially in the aspect of early letter recognition. The lack of use of audio-visual media causes the learning process to become monotonous and only teacher-centered, so that children's active participation in learning is less than optimal. If language stimulation is not optimal,

children can experience communication barriers that have an impact on their confidence and academic achievement in the future. In the digital era, language learning strategies in early childhood are increasingly diverse. The use of interactive educational media, such as animation, is considered effective because it is in accordance with the characteristics of children's learning that are visual and imaginative. This media is able to improve vocabulary, understanding of symbols, and children's motivation in learning languages (Neumann & Neumann, 2022). Therefore, language development through innovative methods that are interesting, fun, and appropriate to the stage of children's development is the key in preparing them for the next level of education.

One of the crucial forms of language stimulation is letter recognition from an early age. Letters as linguistic symbols are the basis of reading and writing skills, and play a role in strengthening children's phonological awareness. Children who are used to recognizing letters and sounds have an easier time mastering early literacy skills, while a lack of stimulation can create barriers to communication and academic achievement (Gonzalez et al., 2020). Therefore, language development strategies need to be tailored to the child's developmental stage and their learning characteristics. In the context of modern education, the use of animation media is an innovative alternative that supports early childhood language development. Animation combines visual, audio, and interactive elements, making it easier to attract the attention of children who tend to be imaginative and learn through multisensory experiences. Research shows that interactive digital media can enrich vocabulary, increase literacy, and foster children's motivation to learn (Neumann & Neumann, 2022).

Literacy skills in early childhood include the skills to recognize letters, understand sounds (phonemes), and associate them with words and meanings. Early literacy is closely related to phonological awareness, which is the basis for reading and writing skills. Children who receive literacy stimulation early on tend to have better language understanding, strong memory, and higher academic readiness. In contrast, a lack of literacy stimulation can hinder language development, lower self-confidence, and impact academic achievement (Gonzalez et al., 2020). In the context of modern learning, early childhood language development and literacy require innovative strategies that are interesting and appropriate to their developmental characteristics. Animation media is an effective alternative because it combines visual, audio, and interactive elements. Animation has been shown to enrich vocabulary, improve letter recognition skills, and strengthen children's motivation to be actively involved in learning (Neumann & Neumann, 2022). Thus, language development that is integrated with literacy skills from an early age, especially through letter recognition with animation media, not only strengthens reading and writing skills, but also fosters confidence, learning motivation, and readiness for children to face the next level of education. At this point, the right stimulus goes a long way in determining the direction of their academic growth and personal development over time. Letter recognition is one of the basic skills that must be instilled from an early age and serves as a foundation for early literacy skills, especially reading and writing (Rahmasari et al., 2022). Early literacy helps children understand the meaning of letters, understand their shapes, and explain them using words. These skills aren't just about academics; but also helps children develop their social, emotional, and communication skills. These skills aren't just technical skills; but it also helps children develop their ability to observe, communicate, and understand the surrounding environment. Because letters are linguistic symbols that are the basis for learning to read and write, letters are one of the most sensual forms of stimulation (Rahmasari et al., 2022).

Proper letter recognition can increase children's motivation to learn, but poor recognition can negatively impact their learning motivation and literary ability (Anggita et al., 2023). Letter recognition at an early age is an important aspect of literary development, with the aim of developing reading and writing skills. At this stage, children are identified by their shape, name, and letters as the first step in understanding the concept of reading (Fathurrahman et al., 2020). As stated by Putra and Ishartiwi (2015), among others, the development of children's letters is a crucial step in helping them develop literary skills. If this process is not done properly, children can have difficulty reading and writing, which can negatively impact the quality of the final work. They are academically disadvantaged. In addition, children's language and cognitive development can also be hampered because letter recognition is the basis for their communication and reasoning skills. Without effective teaching methods, such as the use of engaging and interactive educational media, children can become less interested and lose interest in learning.

Systematic letter recognition helps children understand the shape, name, and sound of letters so they can be more careful when reading instructions. If this process does not go well, children can experience difficulties learning, writing, and even potentially lowering academic achievement over time (Anggita et al., 2023). In addition, barriers to early literacy can also have a negative impact on children's social-emotional development, such as lowering self-esteem and motivation to learn. Therefore, innovative and effective teaching strategies are needed, as well as strategies that take into account the characteristics of early childhood development. Letter recognition is one of the most important aspects in developing

children's literacy. However, some studies show that many children have difficulty understanding the shape, name, and sound of letters if the teaching process is carried out traditionally and repeatedly (Rahmasari et al., 2022). The inability to recognize letters from an early age can have an impact on reading, writing, and improving academic achievement at the next level of education (Anggita et al., 2023).

A child's inability to understand the concept of letters can pose a significant obstacle to their literary development, which in turn affects academic achievement over time. Research shows that children who have difficulty understanding letters from an early age can have difficulty reading and writing, which can hinder their cognitive and language development. Without understanding the basics of letters, children can lose confidence during the learning process, which ultimately affects their motivation and interest in learning. In addition, poor reading skills are often associated with emotional and social difficulties, which can cause children to become quiet or have low self-esteem (Anggita et al., 2023). In this age group, children begin to understand various basic concepts, one of which is the use of letters as a tool to develop their reading and writing skills. Therefore, effective teaching methods are highly valued to encourage children's cognitive and linguistic development. One method that has been proven to improve children's understanding of letters is the use of animation media. Animation media, with its visual and interactive elements, is believed to make the learning process more interesting and exciting. However, while animation media offers a wide range of opportunities, it is important to highlight some significant impacts on children's understanding of letter concepts in order to be applied to the best possible in education.

One of the most widely used strategies today is the use of animation media in the learning process. Animation media combines visual, audio, and interactive elements that can capture children's attention, provide an engaging learning experience, and increase their level of active participation in learning activities (Maghfiroh & Suryana, 2021). According to Munar and Suyadi (2021), animations with soft tones and attractive visuals can help children understand the concepts taught more easily.This is especially relevant to the context of letter recognition, as a child must consistently associate the shape of the letter with its sound. In the context of modern education, the use of innovative teaching media is essential to attract children's attention. Media animation is one of the most effective alternatives because it stimulates the senses of sight, hearing, and hearing, resulting in an interesting and interactive learning environment (Munar & Suyadi, 2021). Based on previous research, compared to traditional methods, animation media can help children learn shapes, names, and sound letters more easily (Maghfiroh & Suryana, 2021; Nurjanah et al., 2018).

In addition, negative media can increase children's motivation and involvement in learning activities. For example, Mardani (2022) notes that pictorial illustrations can improve students' learning experience by showing interesting and developmentally appropriate learning activities. This finding is also explained by Afifah et al. (2023), who state that image-based animation helps children understand the letters of the alphabet through visually stimulating activities. Berliani et al. (2024), Animation media is defined as a type of educational media that can improve children's comprehension skills. Animation media has a strong visual appeal that makes images move with sound elements, making the learning process more engaging and entertaining for children. In this context, animation media encourages children to learn by teaching them about letters, words, and sentences in a more engaging way. Although animation media has a lot of potential, its use in early childhood education still faces some challenges. Some teachers are not proficient in utilizing technology as well as possible in their teaching activities, so animation media is often only used as a teaching aid, rather than as the main teaching strategy (Sudaryono et al., 2018). In addition, limited infrastructure, such as computers or projectors in PAUD, can help the maximum use of this material. Factors such as teacher effectiveness and learning environment play an important role in ensuring the effectiveness of media in improving early childhood literacy (Novelia & Hazizah, 2020). From a child's developmental perspective, animation media has a strong advantage because it is aligned with the characteristics of early childhood learning that are more visual, easily affected, and sensitive to danger. This is in line with Piaget's cognitive theory which emphasizes the importance of specific experiences in developing conceptual understanding in school-age children (Fathurrahman et al., 2020). By introducing letters in the form of interactive animations, children can not only learn abstract symbols but also relate them to real-world examples and contexts, making the learning process more engaging.

Based on the understanding of various sources, it can be concluded that the use of animation media in early childhood education is very useful in accelerating the learning process. Media that depicts movement and sound can capture children's attention and create a more interactive learning experience. This media can also be entertaining. This makes it easier for children to understand the concepts being taught, either through letters, words, numbers, or skills when reading aloud. In addition, animation media can improve children's learning process because it presents material in an interesting way and in accordance with their development. Taking all things into account, animation media is an effective tool to improve student learning that not only facilitates the understanding of the material; but also increase

students' motivation and interest in learning. Mardani (2022), shows that animation media can significantly help improve early childhood reading skills. The study concluded that the use of entertaining animation media, with lively visual elements, creates an engaging and interactive learning environment. This makes children more focused and motivated to learn, especially in terms of letters and words. The main conclusion of this study is that, in addition to being effective in teaching the concept of early learning, pictorial animation media can also increase children's attention span and concentration in the classroom because it presents the material in a way that is easier to understand and more engaging than traditional methods.

With the ability to recognize the alphabet through pictures in group B children of early childhood education Sinar Mulya Teluk Gelam" shows that the use of image-based animation media has a positive impact on children's ability to understand the alphabet. This study examines how animation media, which presents the alphabet in an interesting way, can improve children's understanding of the alphabet, Afifah et al. (2023). The main conclusion of this study is that animation media makes it easier for children to understand and feel excited because the content is presented in a more visually appealing and entertaining way. Therefore, the use of animation media is essential in introducing basic concepts, such as letters in early childhood, which in turn increases their interest and enthusiasm for learning. Helvina, Noeng, and Timba (2021), During the Covid-19 Pandemic" shows that the use of animation media has a positive impact on students' learning abilities, especially during the Covid-19 pandemic. This study examines how animation media can improve children's learning abilities by presenting material in an interesting and interactive manner. The main conclusion of the study is that, despite the difficulties faced in the learning process during the pandemic, interactive media not only helps children learn words and phrases; Interactive media also increases their motivation and learning goals. Thus, the use of animation media is very effective in enhancing distance learning, allowing students to focus and experience learning in a more engaging and easy-to-understand way. The use of animation media has a significant positive impact on children's ability to understand and appreciate written language. Media animations that present content in an engaging and interactive manner increase children's motivation and involvement in learning. These studies show that animation media can help children understand and appreciate others more easily, as well as increase their awareness and understanding during the learning process. Therefore, the researchers were interested in researching how animation media could be used as an effective tool to help children learn, especially during periods of low student numbers in schools, such as during the pandemic.

Along with the advancement of educational technology, animation media is increasingly used in the teaching process of children. Because it combines visual, audio, and interactive elements, animation media can increase children's attention, motivation, and understanding of the material taught (Maghfiroh & Suryana, 2021). Previous research has shown that the use of animation has a positive impact on children's learning abilities (Mardani, 2022) and makes it easier for them to understand and practice letters (Afifah et al., 2023). However, more research is still needed to comprehensively understand how animation media affects the understanding of letter concepts. In the context of children's teaching, the purpose of research must be able to answer problems related to the development of early childhood literacy, especially in letters. Letters are the foundation of reading and writing learning, so children need to have access to educational strategies that are interesting, interactive, and in line with their development (Rahmasari et al., 2022).

With the advancement of educational technology, animation media is seen as one of the innovations that has the potential to increase the effectiveness of literacy learning. By utilizing visual, audio, and interactive elements, animation media can effectively capture children's attention and increase their motivation to learn (Maghfiroh & Suryana, 2021). Therefore, the purpose of this study is to understand how the use of animation media can have a positive impact on children's understanding of the concept of letters. With the achievement of this goal, it is hoped that the research will be able to make a theoretical contribution to the development of knowledge and provide practical benefits for educators and educational institutions in implementing more innovative literary teaching strategies.

In this digital era, educational media is increasingly advanced, allowing teachers and educational institutions to provide innovative teaching methods. One of the most promising mediums in the context of early literacy is animation, as it combines visual, audio and interactive elements in a way that is easy for children to understand and does not interfere with alerts, sounds or movements. According to recent research, the use of animation media can significantly improve children's ability to communicate verbally, visually, and phonically, compared to the use of traditional media (Afifah et al., 2023; Ayunda & Aulina, 2023; Mardani, 2022; Putri et al., 2024; Basir at all, 2025).

In practice, the use of animation media is largely influenced by teacher evaluation, school facilities, and curriculum orientation. According to Piaget and Mayer's developmental theory, multimodal methods such as animation are more effective in helping children understand letters as symbols of sounds and words.

The product developed is also very valid and is often referred to as a learning resource (Obsession: Journal of Early Childhood Education, 2023).

Based on the facts and findings of the study, the main issues identified in this study are the effectiveness of literacy education for early childhood due to the dominance of conventional methods, as well as the lack of use of animation media that can improve early literacy cognitively, linguistically, and efficacy. Therefore, this study highlights the need to use animation media in the letter process to improve learning outcomes and motivation of early childhood children, while offering innovative solutions that are in line with the latest trends.

Conventional methods, such as teaching through writing and books, are often monotonous and less appealing to children who are still in the cognitive-operational developmental stage, where learning most effectively occurs through silent practice and multisensory interaction. Literacy in children's education is a crucial step in building a strong literacy foundation, which will ultimately affect children's reading and writing skills in the next field of education. However, the implementation of literacy education for children of this generation consistently raises various problems that indicate a teaching approach that is not fully in accordance with the characteristics of children of this generation (Rahmasari et al., 2022).

Letter recognition in early childhood is one of the fundamental aspects in building early literacy skills that determine their readiness for the next level of education. However, facts in the field show that many children experience obstacles in understanding the shape, sound, and name of letters if learning is carried out with a traditional approach that tends to be monotonous. This condition results in low interest in learning, weak memory, and decreased motivation for children to be actively involved in the learning process. The use of animation media emerged as an alternative solution that is in line with the characteristics of early childhood development that are visual, imaginative, and tend to be interested in brightly colored moving things. Ayunda and Aulina (2023) prove that the use of animation significantly increases children's letter recognition scores, from the fair to good category. Similarly, Ayuni and Paramita (2025) show that animation-based audiovisual media is able to double the average score of children's letter recognition skills, indicating real effectiveness in improving aspects of basic literacy. In addition to improving cognitive skills, animation media has also been shown to affect children's affective and social aspects. The study of Kresnawati et al. (2022) found that animation-based e-flashcards not only strengthen pre-reading skills, but also increase learning motivation because children find the learning process more enjoyable. In line with that, the research of Putri et al. (2024) emphasized that animated videos enrich early childhood vocabulary through the association between moving images and simple narratives. This aspect strengthens the relationship between letter symbols and word meanings so that early literacy develops more optimally. Not only focusing on letter recognition, animation also plays a role in fostering symbolic thinking skills. Sartika and Alimudin (2025) found that animated videos have a significant impact on children's ability to understand symbolic representations, which is the foundation of abstract thinking in advanced literacy. This confirms that animation media has a multidimensional influence, including cognitive, language, and social-emotional aspects.

Children learn by building their knowledge through concrete and visual activities; Therefore, teaching methods that use only verbal explanations and statistics will be less effective. In addition, Mayer's (2021) multimedia education theory emphasizes the importance of using two different senses—visual and auditory—to increase the effectiveness of the learning process. The use of animated media that combines moving images, sounds, and narratives can undermine this principle so that children can not only passively receive information but also analyze letter symbols through a variety of sensory modalities.

Letter recognition at an early age is an important foundation in children's literacy development. Unfortunately, traditional methods such as whiteboards and notebooks are often monotonous and less engaging, so children's motivation and understanding tend to be low. Research by Ayunda and Aulina (2023) shows that the use of animation media significantly improves the ability to recognize letters, with the average score increasing from 56.5% to 82.2%. Furthermore, a study by Ayuni and Paramita (2025) proved the effectiveness of audiovisual media in improving letter recognition skills, with an average increase from 27.73 to 54.93 ($p = 0.002$). Similarly, Kresnawati et al. (2022) show that animated e-flashcards enhance pre-reading abilities through attractive visual and audio elements. Sartika and Alimudin (2025) also found that animated videos significantly improved the symbolic thinking skills of children aged 5–6 years ($p < 0.05$). Another study by Putri et al. (2024) revealed that animation video-based learning media significantly enriched the vocabulary of children aged 4–5 years. Based on these findings, it is clear that the use of animation media has great potential in deepening the understanding of letter concepts in early childhood—forming the identity of the problem that is to be studied in this thesis.

Thus, the identity of the problem in this study lies in the gap between children's needs for interesting, interactive, and developmentally appropriate learning methods, and the fact that learning practices in many PAUD are still dominated by conventional approaches. This research departs from the urgency to test

the extent to which animation media can improve the understanding of the concept of letter recognition, both in terms of shape, name, and sound. This focus is important because early literacy is the foundation for future reading, writing, and critical thinking skills.

II. METHOD

This study employs a quantitative approach to examine the influence of animation media—specifically educational videos and e-flashcards—on three aspects of letter recognition: visual shape, verbal pronunciation, and phonemic association. The participants were children aged 4–6 years in a formal early childhood education (PAUD) setting, a range chosen for its alignment with Piaget's preoperational phase and phonemic readiness. To ensure developmentally appropriate implementation, the intervention was limited to 5–10 minutes sessions with teacher guidance, focusing on realistic classroom conditions with limited technology access. This focused scope allows for a comprehensive evaluation of how short, interactive digital content affects children's engagement and literacy outcomes.

The research utilizes a one-group pretest-posttest design ($O_1 \to X \to O_2$), measuring children's abilities before and after the animation-based treatment. While this design is effective for identifying initial trends and is flexible for field research in early childhood settings, it represents a primary limitation of this study. The absence of a control group and randomization means that internal validity threats—such as natural maturation, the "testing effect" from repeating the assessment, and external historical factors—cannot be entirely ruled out. Consequently, the results are treated as indicative and exploratory, providing a foundational baseline for the effectiveness of animation media rather than absolute proof of causation.

Data collection was conducted through a multisensory approach involving pre- and post-intervention tests, structured observations of children's focus and enthusiasm, and Likert-scale teacher questionnaires to assess usability and perception. To ensure academic rigor, instruments were validated by experts and tested for internal consistency using Cronbach's Alpha (> 0.70). Statistical analysis included the Shapiro–Wilk normality test and Levene's homogeneity test as prerequisites for the t-test. Furthermore, the study utilized data triangulation—combining test results, observations, and documentation—to enhance the credibility and depth of the findings.

III. RESULT AND DISCUSSION

The research was carried out by providing a pretest to determine the initial ability of letter recognition, then continued with treatment in the form of learning using animation media, and ended with a posttest to determine changes in the understanding of the concept of letter recognition in children.

A. Research Results

A pretest is given before the use of animation media with the aim of finding out the child's initial ability to recognize letters. The test includes the ability to recognize letter shapes, pronounce letter names, distinguish similar letters, and associate letters with simple sounds or words.

The results of the pretest showed that most children were still in the sufficient category and had not developed in letter recognition. Children have difficulty distinguishing letters that have similar shapes such as *b–d* and *p–q*, and still need the teacher's help in mentioning the names and sounds of the letters.

Descriptively, the results of the pretest can be summarized as follows.

- Lowest score : 40
- Highest score : 70
- Average (mean): 55

These results show that children's initial letter recognition skills still need to be improved through the use of learning media that is more interesting and in accordance with the characteristics of early childhood.

B. Posttest Result Data

Posttests are given after children participate in learning using animation media for several meetings. The tests given have the same indicators as the pretest so that the results obtained can be compared objectively.

Posttest results showed that there was an increase in understanding of the concept of letter recognition in most children. Children seem to be more able to recognize the shape of the letters, pronounce the names of the letters more confidently, and associate the letters with simple sounds or words.

Descriptively, the results of the posttest can be summarized as follows.

- Lowest value : 70
- Highest score : 95
- Average (mean): 85

This increase in score shows that learning using animation media has a positive impact on early childhood letter recognition skills.

C. Pretest and Posttest Results

The comparison between the pretest and posttest results showed an increase in scores in all or almost all of the study subjects. The average score increased from 55 in the pretest to 85 in the posttest, with a difference of 30 points.

This increase indicates that the use of animation media can help children understand the concept of letter recognition better. Animation media provides interesting visual and auditory stimuli so that children are more focused, enthusiastic, and active in the learning process.

D. Observation Results during learning

Based on the results of observations made during the learning process using animation media, the following findings were obtained:

1. Children show higher attention when animated media is displayed
2. The child looks enthusiastic and actively mentions the letters that appear on the screen
3. Children are more courageous in answering the teacher's questions
4. Interaction between teacher and child increases during learning
5. The classroom atmosphere becomes more fun and conducive

The results of this observation support the test data which shows an increase in understanding of the concept of letter recognition after the use of animation media.

E. Results of the teacher questionnaire

Based on the questionnaire given to teachers, the results were obtained that teachers gave a positive response to the use of animation media. The Master states that:

- Animation media is easy to use
- Animated media helps children understand letters faster
- Children become more motivated and not easily bored
- Animation media according to the characteristics of early childhood

The results of this questionnaire reinforce the research findings that animation media is effectively used in learning letter recognition.

Table 2. T-Test Results

Statistics	*Pretest*	*Posttest*
Sample Count (N)	15	15
Mean	55.00	85.00
Standard Deviation	7.97	6.45
Minimum Score	40	75
Maximum Value	70	95

Based on table 2. Showing descriptive statistics for pretest (pre-intervention) and posttest (post-intervention) data. The sample count (N) was 15 for both measurements, indicating a one-group pretest-posttest design on the same subject. The mean of the pretest was 55.00 increased to 85.00 in the posttest, with the standard deviation decreasing from 7.97 to 6.45 (score variability was lower after the intervention). The range of pretest scores (40-70) widened to posttest (75-95), indicating an overall consistent improvement.

Table 3. Paired Test

Remarks	Value
Mean Differens	30.00

Standard Deviation Difference	4.71
t - count	24.63
df (N – 1)	14
Sig. (p – value)	0.000

Based on table 3, it shows that the results of the paired sample t-test, which tests the null hypothesis (H0: no difference in the average pretest-posttest) at the significance level of α=0.05. The mean difference of 30.00 reflects an increase in the absolute mean between the paired measurements. t-count 24.63 (df=14) and p-value 0.000 (<0.05) reject H0, concluding that there is a statistically significant difference. The use of animation media has been proven to significantly improve understanding of the concept of letter recognition, according to the test criteria (p-value < α). These results are relevant for early childhood education research, where pretests are commonly used to measure the effectiveness of a single intervention.

Testing Criteria

- Significance level (α) = 0.05
- If **the p-value < 0.05**, then there is a significant difference between the pretest and posttest results.

Based on the results of the paired sample t-test in Table 2, a t-calculated value of 24.63 was obtained with a significance value (p-value) = 0.000, which is smaller than the significance level of 0.05. Thus, it can be concluded that there is a significant difference between the pretest and posttest scores of understanding the concept of letter recognition in early childhood. These results show that the use of animation media has a significant positive influence on improving the understanding of early childhood letter recognition concepts.

B. Discussion

This study aims to determine the influence of the use of animation media on the understanding of the concept of letter recognition in early childhood. Based on the results of the research that has been presented, it was found that there was a significant improvement in children's letter recognition skills after participating in learning using animation media.

This study aims to determine the influence of using animation media on the understanding of letter recognition concepts in early childhood. Based on the research findings, a significant improvement was observed in the children's letter recognition skills following the intervention.

The pretest results indicated that the children's initial letter recognition ability was relatively low, with an average score of 55.00. At this stage, children faced notable difficulties in recognizing specific letter shapes, distinguishing between "mirror letters" (such as *b–d* and *p–q*), and associating letters with their corresponding sounds or words. This condition is highly consistent with the characteristics of early childhood learners who are still in the preoperational stage. According to Piaget (1952), children at this stage require concrete and engaging stimulation to understand abstract symbols like letters. Without such stimulation, symbols remain disconnected from the child's lived experience.

Following the treatment, the posttest results showed a significant increase, with the average score rising to 85.00. Children demonstrated a stronger ability to recognize letter forms, pronounce letter names more fluently, and associate letters with the initial sounds of words. This substantial improvement is statistically validated by the paired sample t-test, which yielded a significance value of 0.000 ($p < 0.05$), confirming a significant difference between pre-intervention and post-intervention abilities.

These findings strongly reinforce Mayer's (2009) Multimedia Learning Theory, which posits that learning is most effective when information is presented through a combination of visual and auditory channels. Animation media provides multisensory stimuli that help children process and retain information more efficiently than static media. Furthermore, the use of moving images coupled with phonetic sounds captures children's attention and boosts their internal motivation to learn.

Observations during the learning process further supported these results, showing that the children were more enthusiastic, focused, and active. They did not tire easily and displayed a keen interest in naming the letters as they appeared on the screen. This aligns with the findings of Rahmani and Mayar (2023), who stated that animation media can significantly increase children's active involvement in early literacy activities.

The novelty and originality of this study lie in the specific instructional design and pedagogical integration of the media used. While many young children are frequently exposed to digital animations on

public platforms like YouTube, those videos are often designed for passive entertainment. In contrast, the animation in this study was developed specifically as an instructional tool with precise phonetic articulation and a visual tempo calibrated to the cognitive capacity of young learners.

The originality of this approach is characterized by "guided animation," where the content is not intended for isolated viewing but is designed with interactive pauses that facilitate a dialogue between the teacher and the child. Unlike commercial animations that often feature rapid transitions—which risk causing cognitive overload—this media emphasizes the clarity of sound and the visualization of frequently confused letter shapes. Thus, the animation serves not merely as a visual aid, but as a **cognitive bridge** that transforms abstract symbols into meaningful, concrete representations. This integration of structured multisensory stimuli with direct teacher mediation represents the primary value added by this research compared to generic animation media.

IV. Conclusion

Based on the results of research that has been conducted on the influence of the use of animation media on the understanding of the concept of letter recognition in early childhood, it can be concluded that the use of animation media makes a positive contribution to improving children's early literacy skills. The findings of the study show that children's initial ability to recognize letters before being given treatment is still at a relatively low level, especially in terms of distinguishing similar letter shapes, mentioning letter names consistently, and associating letters with simple sounds or words. This condition shows that children still need more concrete, interesting, and developmental learning stimulation. After children participated in learning using animation media, there was a significant improvement in the understanding of the concept of letter recognition. Children become better able to recognize the shape of the letters visually, pronounce the names of the letters more confidently, and associate the letters with the initial sound of the word. This increase is not only seen from higher posttest results than pretests, but also from changes in children's behavior during the learning process, such as increased attention, enthusiasm, and active involvement in learning activities. In addition, the use of animation media also has a positive impact on the learning atmosphere in the classroom. Learning becomes more fun and not monotonous, so that children do not feel bored easily. The interaction between teachers and children also increases, because animation media encourages children to ask questions, answer, and imitate the sounds of the letters displayed. Thus, animation media not only functions as a tool for delivering material, but also as a means to improve the quality of learning interactions. Overall, the results of this study provide an overview that animation media is one of the learning media that is feasible and relevant to be used in early childhood education, especially in letter recognition. Animation media is able to bridge children's needs for concrete and fun learning with the demands of early literacy mastery. Therefore, this research can be used as an initial reference for teachers, schools, and researchers in developing animation-based learning that is in accordance with the characteristics of early childhood.

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