The Effect of Digital Card Media Towards Children's Ability to Recognize Letters

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ABSTRACT: The background of this research is the low ability to recognize letters for group B children in Pembina State Kindergarten, Gorontalo District, Gorontalo City. Children do not know the various forms of the alphabet and letters, and the letters written by children are still mixed up or upside down. This lack of ability is caused by teachers not using creative and interesting media to stimulate children's abilities. So, this study aims to see an increase in the ability to recognize letters with creative and practical media. This research method uses a quantitative experimental method with a purposive sampling technique. Data collection was carried out using observation techniques and performance tests. The sample involved 16 respondents (7 male and 9 female). The results of the study show that learning using a blackboard is less effective in improving children's letter recognition skills, especially in aspects of language development. The findings recommend that schools be asked to evaluate and review each learning strategy, planning, and implementation. It is recommended that early childhood educators improve their competence in designing learning activities that are innovative, creative, interesting, and based on digital technology.

Keywords: digital card media, letters recognition ability, early childhood

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1 INTRODUCTION

Early childhood refers to children aged 0 to 8 years who are during a unique phase of growth and development. This implies that one has unique interests, qualities, abilities, and histories. Children aged 0-8 years are included in childcare, private and public preschool, kindergarten, and basic education programs throughout childhood, according to NAEYC (Zahara et al., 2022). Education plays a crucial role in human life. Education is the government's efforts to promote an individual's potential to develop the country. It is anticipated that education will be able to mold people into the next generation, equipping them with the information and abilities necessary for the advancement of the country, the state, and even human existence itself. The different educational levels of elementary school, junior high, high school, and further education all contribute to the acquisition of this information. Children must complete an introductory level before moving on to the primary school level for their education to go as smoothly as possible. Early Childhood Education which will serve as the fundamental building block for the education of the next kid, is the educational level issue. Early Childhood Education is a platform in education for children from birth to age six that aims to promote children's growth and development and is governed by law.

Moreover, children have rapid development at the age of 0-6 years old, and by providing them with regular stimuli and monitoring, it is possible to identify the child's development aspects. Those aspects include religious and moral values, physical, motoric, cognitive, language, social, emotional, and art. In addition, language skill is one of the aspects that must be developed. The development of children's language skills is crucial since language is the primary factor for humans to communicate orally and in writing (Ningtyas, 2014). Teaching words is essential in language learning because words are the foundation of the language (Alqahtani, 2015). Children need to develop other language aspects from an early age, such as the ability to read, speak and write. Early reading is the skill of matching written words with sounds that the child hears (Ardini & Handini, 2018). In early childhood education in the 2003 curriculum, it is stated that early writing and reading skills are termed literacy abilities, in education, it is stated Borre et al., (2019) that literacy is the key to early childhood and is the foundation of the academic field. Howell and Gengel (2005) stated that students' poor early reading skill would affect their performance in further education. In general, children's reading readiness is until the age of six. Hence, the children need to be introduced to letter recognition.

Letter recognition through media has the capability of helping children to have a better understanding because it involves the senses of sight and hearing (Rahayuningsih et al., 2019). Additionally, learning materials in the form of digital card media can be used to stimulate children in learning letter recognition. Digital card media is one of the digital learning media in the form of animated letter cards that can develop children's said skills. Digital card media is included in IT-based (Information Technology) learning media, designed using the Microsoft PowerPoint application to support the ability to introduce letter shapes and symbols to children aged 5-6 years.

Based on previous findings research at TK Pembina State Kindergarten, Kota Utara District, Gorontalo City, it is discovered that most students' ability to recognize the letter, shapes, and symbols was not optimal. Approximately 16 children displayed it in the B2 group; there were 12 children's ability to recognize letters that had not developed optimally. In comparison, four children can recognize letters well without the teacher's assistance. Further, from approximately 12 children, it was found that they still had difficulty pronouncing the alphabet from A-Z during the learning process. Most children recognize the letter shape but not the sound and vice versa. The children also struggle to distinguish between vowels and consonants, cannot write their names independently, and cannot write a good word in which there are still switched or reversed letters. So, to fill this problem gap, this study aims to see an increase in the ability to recognize letters with creative and practical media.

2 THEORETICAL STUDY

2.1 *Children's Ability to Recognize Letters*

The ability to recognize initial letters is very important to be built here, perhaps according to the child's age stage so that the language skills possessed by the child development so that it affects the child's personality in society (Rakimahwati & Hanifah, 2022). The ability to recognize letters for children aged 5-6 years includes the ability to name the symbols, name the objects, name the groups of pictures that have the same initial sound/shape of letters, and the relation of letter's sound and form (Kapiso et al., 2021). The stimulus for letter recognition stimulates children to recognize, comprehend, and use written symbols to communicate. Hence, the children can communicate and improve their knowledge through letter symbols.

In introducing letters to children, it is necessary to introduce letter forms (vowels and consonants). Vowels are language sounds produced by the vibration of the vocal cords without constriction in the vocal tract above the glottis (Nasution, 2017). There are six kinds of vowels in Indonesian: a, i, u, e, and o (Maulidya et al., 2019). Consonant phonemes are created when the airflow from the lungs is inhibited during the pronunciation of the sound; the inhabitation can occur in total or partially. Consonant phonemes include b, p, d, t, j, c, k, g, z, s, x, h, m, n, r, and l.

The advantages of teaching children to recognize letters at a young age are crucial to ease the children to read and write. Seefeldt and Wasik (2002) claim that the advantages of letter recognition in early childhood are a milestone in the kindergarten curriculum through repeated and significant disclosures to letter concept recognition activities so that children become aware of letters and comprehend those letters can form words. The letter recognition strategy from an early age is an excellent method for children's language development since it helps prepare the children to read fluently (Surtika et al., 2020). Children with great letter recognition ability tend to have better reading skills. All in all, it can be concluded that the advantages of letter recognition in early childhood provide benefits for children to prepare themselves in learning to read and write.

There are several appropriate stages in teaching children to recognize letters, namely: 1) Introducing various lines types (vertical, flat, slanted, curved, and circle lines); 2) Showing various geometric shapes kinds, (quadrilateral, circle, triangle, and semi-circle); 3) Combining several lines to form letters, (e.g., curved lines /c/ and vertical lines /i/ into letters "a, b, d, p, q"; 4) Pronouncing the sound of each letter in a different and interesting tone, (e.g., the letter /s/ sounds like a snake hissing "sssss"); 5) Pronouncing the names of each letter of the alphabet's names; 6) Showing the names of alphabet letters; 7) Sorting the alphabet letters from left to right; 8) Introducing the concept of vowels (a, i, u, e, o) then consonants (b, c, d, f, g, h, j, k, l, m, n, p, q, r, s, t, v, w, x, y, z) in a fun method (Karoma, 2019). Based on the letter introduction stages described above, it can be concluded that introducing letters to children between the ages of 5 and 6 involves introducing various line forms and geometries as well as vowels and consonants to build hand-eye coordination and fine motor skills.

2.2 Digital Card Media

Digital is derived from the Greek word *digitus*, which means 'fingers', Digital is described as a state of numbers consisting of the numbers 0 and 1 (two radices of the number 10) or off and on. Meanwhile, the Card is taken from English which means card. Digital media helps in changing the way young people learn, play, socialize, and participate in a society where this makes developments in social institutions, education, and the like, especially in meeting the needs and future generations. In addition, Ashcroft et al., (2018) mentioned that an application that uses flashcards is an attractive interface that takes the computer settings and knowledge to learn new words. It can be concluded that digital media can contribute to meeting the needs of young people to learn in the development of future education through computer devices. Digital card media with the concept of letter cards used with PowerPoint applications was created by the author as one of the learning media to increase the interest and ability of children aged 5-6 years to recognize letters and avoid their boredom in class.

Furthermore, in helping children to increase awareness, especially of the development of technology and communication, computers are considered as one of the media that can be used primarily in cognitive, social, and emotional aspects (Trifunović et al., 2018). In addition to Microsoft Word and Excel, Microsoft has also developed PowerPoint as a program specifically designed to be able to display attractive multimedia programs, easy to manufacture, easy to use, and relatively inexpensive because it does not require raw materials for data storage.

3 METHOD

This research employed the experimental method, which is used if the researcher wants to experiment to find the effect of the independent variable/treatment/certain treatment on the dependent variable/outcome/output under controlled conditions. It was conducted for approximately three months in the same year, starting in February and ending in April.

3.1 *Instruments*

The instrument used in this study is based on the grand theory of 3 parts: pronouncing, writing, and distinguishing. In this study, the test executed before and after being given treatment in the form of a series of questions with a score of 1 = UC (Undeveloped Category), 2 = DC (Developing Category), 3 = DaE (Develop as Expected), and 4 = EDC (Exceptionally Developed Category). Filling in the data is accomplished by giving a checklist mark on one of the score values considered appropriate. Based on a validation test, 12 indicators of children's ability to recognize letters were found: five indicators of pronouncing, three of writing, and four of distinguishing. The number 0.925 appears due to the Cronbach Alpha reliability test, which means that the instrument grid is valid and reliable for this study.

3.2 *Respondents*

Respondents in this research were students of group B2 with a total of 16 students (seven males and nine females) in an experimental class in TK State Pembina Kindergarten, Kota Utara District, Gorontalo City with poor letter recognition ability. In addition, purposive sampling is the sampling method used, which is chosen based on research objectives. The author took sample B2 because the students are passive compared to groups B1 and B3, who have better letter recognition ability.

3.3 *Data Analysis*

The result was analyzed using Microsoft Excel 2013 using normality tests, hypothesis testing, and statistical hypotheses. The normality test was utilized to determine if the pre-test and post-test data came from a class with a normal distribution or not with a normal distribution using the Lilliefors test statistic. Meanwhile, hypothesis testing was applied to determine the adjustment of letter recognition ability in children before and after treatment by using paired sample t-test test formula. Further, statistical hypotheses were employed to identify the influence of digital card media on children's ability to recognize letters.

4 RESULT AND DISCUSSION

4.1 *Result*

4.1.1 *Pre-Test Data Results of Children's Letter Recognition Ability*

Based on Table 1, pre-test data revealed that of 16 children, 4 children developed as expected (DaE) (25%), 10 children in the developing category (DC) (62.5%), and 2 children in the undeveloped category (UC) (12.5%).

Table 1. Frequency distribution table of Pre-test Data on Children's Letter Recognition Ability

No	Interval Class	Frequency	Percentage (%)	Category
1	40-48	0	0	EDC
2	22-24	4	25	DaE
3	19-21	10	62.5	DC
4	16-18	2	12.5	UC
	Amount	16	100	

Based on Figure 1, it was discovered that from 16 respondents, 5 of them obtained a total score of 31 to 33, namely, the child was able to recognize letters on their own without the teacher's assistance and was classified developed as expected, while 10 children received a total score of 22 to 27 in developing category, and 4 other children are classified in the undeveloped category with a total score of 18 to 19. Thus, it can be concluded that the ability to recognize letters of children in group B2 in the pre-test data is included in the developing category.
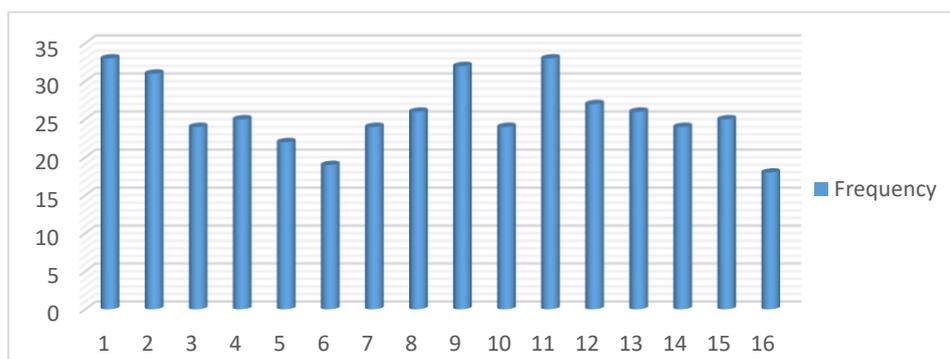
Figure 1. Graph of Total Score of Pre-test Data on Children's Letter Recognition Ability

4.1.2 *Results of Post-test Data on Children's Letter Recognition Ability*

Based on Table 2, it can be concluded that the post-test data related to children's early writing skills were increased, that from 16 children 5 of them (31.25%) were classified as very exceptionally developed categories (EDC), 9 children (56.25%) in the category developed as expected (DaE), and 2 children (12.5%) in developing category (DC).

Table 2. Frequency distribution table of Post-test Data on Children's Letter Recognition Ability

No	Interval Class	Frequency	Percentage (%)	Category
1	40-48	5	31.25	EDC
2	31-39	9	56.25	DaE
3	22-30	2	12.5	DC
4	12-21	0	0	UC
Amount		16	100	

According to Figure 2, it was found that from 16 respondents, there were 5 children obtained a total score of 41 to 43 which was classified as an exceptionally developed category (EDC), while 9 children obtained a total score of 32 to 36 in the developed as expected category (DaE), and the other 2 children with a score of 28 to 29 in developing category (DC). Hence, it can be concluded that the ability to recognize letters in group B2 in the post-test data was in developing as an expected category.
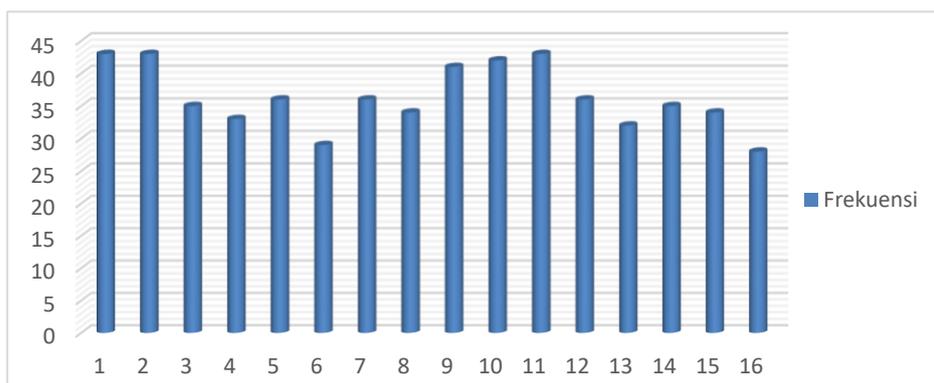
Figure 2. Graph of Total Post-test Data Score on Children's Letter Recognition Ability

4.2 *Discussion*

Based on the study results, it can be identified that in the children's letter recognition ability before treatment (pre-test), there are 2 children (12.5%) in the undeveloped category, 10 children (62.5%) in the developing category (DC), and 4 children (25%) are in the developing as expected category (DeE). Further, there were no children with exceptionally developed categories in the pre-test data. In conclusion, children's ability to recognize letters in group B2 in the pre-test data included in the developing category (DC). The advantages of a digital game in which kids used a keyboard to spell words over the course of a month (two sessions per week) were demonstrated by Elimelech and Aram (2020). The game helped the kids develop their early literacy abilities (letter knowledge, phonological awareness, word reading, and word writing).

Moreover, in the ability to recognize letters in children after treatment (post-test), it was found that there are 2 children (12.5%) in the developing category (DC), 9 children (56.25%) in the developing category as expected (DaE) and 5 children (31,25%) are in the exceptionally developed (EDC). Hence, the said ability in group B2 in the post-test data was included in the developing as expected category (DaE). It was shown that there was significant improvement after the provision of the treatment, with an average value of 25.81 before treatment and an increase to 36.25 after treatment. This study was conducted to determine the effect of digital card media on the ability to recognize letters of children in group B. Based on the statistical analysis result of the t-test, the value of $t_{count} = 6.29$, and the value of stable at the 0.05 level of significance is 2.120. Thus, $t_{count} > t_{table}$, then H_0 is rejected or H_1 is accepted, meaning that there is an influence between digital card media on the ability to recognize letters of group B children in the TK State Pembina Kindergarten, Kota Utara District, Gorontalo City.

The implementation of treatment using digital card media begins with an explanation from the teacher regarding the activities that the children will carry out. On the first day, the children looked enthusiastic and curious about the activities. Some children still do not know some letters, are difficult and stiff, and even need help to name some vowels and consonants after digital card media is applied. To maximize learning, young

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children's participation in digital activities needs to be intentionally supervised. According to Nobre et al., (2020), interactive media and digital activities must be of a high standard, age-appropriate, and under the supervision of adults. In addition to media quality, there is the standard of adult support. On the second day, the children were still enthusiastic about learning activities using digital card media. The activity on the second day was to pronounce the letters of the alphabet from a-z, but they still had difficulty answering the letters pointed to by the author.

Furthermore, from the third day until the eighth day of treatment, the children enthusiastically carried out activities using digital cards. Making learning activities interesting makes children motivated to learn. Motivation is an encouragement that comes from a person and makes individuals have the effort, desire, and encouragement to achieve high learning outcomes. Teachers should guide their young children because they act as their mentors in the digital environment (Elias et al., 2022). Like the previous day, in the fourth to eighth treatment, the children were asked to talk about the activities performed according to the given theme after implementing digital card learning. The implementation of digital card media helps stimulate children's enthusiasm in recognizing letters which is the most important skill they must master at age 5-6 years before entering reading and writing lessons. Introducing letters to children can hone mastery of aspects of language development and grow their confidence.

Based on the descriptions, the author concluded that digital card media is useful for fostering the ability to recognize letters in children since the activity trained the children's auditory, visual as well as memory, that the children's other language skills, such as speaking, reading, and writing. There was a significant difference in the children's letter recognition ability before and after the treatment in group B children in the TK State Pembina Kindergarten, Kota District, Gorontalo City. Before the treatment, the child's ability to recognize letters according to the average value obtained was in the developing category which can be seen.

From the pre-test results that there are still many children who still need the teacher's help in the activities of pronouncing vowels and consonants, pronouncing the complete alphabets, the letters in a word, writing their names independently, writing letters that are pronounced and appointed by the teacher, distinguish the letters b and d, f and v, p and q, and h and n. Further, after 8 times of treatments, almost all the children were able to do letter recognition activities correctly with the average value obtained in the post-test data in the development as expected category. Thus, it was proved that digital card media influences the ability to recognize letters of group B children in TK State Pembina Kindergarten, Kota Utara District, Gorontalo City.

5 CONCLUSION

The study findings reveal that digital card media significantly stimulates children's ability to recognize letters, particularly in developing language skills. Based on these findings, schools need to evaluate and review each strategy, planning, and learning

implementation. Digital-based learning provides fun learning as well as optimizes children development's aspect. Further, kindergarten teachers need to enrich their competence in designing innovative, creative, and interesting learning activities for children based on digital technology. Parents are required to improve their pedagogic skills, and parenting styles to aid the children in recognizing letters at home and develop better quality interactions with the teachers. Thus, it was proven that digital card media is highly effective in improving early childhood's ability to recognize letters.

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