THE EFFECT OF DESKTOP-BASED SPELLING WORDS BOX GAME ON THE BEGINNING READING ABILITY OF 5-6 YEAR OLD CHILDREN IN PEMBINA BARAT STATE KINDERGARTEN, PAYAKUMBUH CITY

Gladyz Hafiza Sauvana[1], Ria Novianti[2], Novidawaty Tambunan[3]

[1,2,3,] *Universitas Riau*
E-mail : [1]gladyz.hafiza3297@student.unri.ac.id, [2]ria.novianti@lecturer.unri.ac.id, [3]tambunannovidawaty@gmail.com

ABSTRACT

This study aims to determine the effect of the Spelling Words Box desktop-based game on the emergent reading skills of children aged 5–6 years at TK Negeri Pembina Barat, Payakumbuh City. The game is designed interactively using a multisensory approach that combines visual, auditory, and hands-on elements to stimulate early phonetic and literacy skills. The research employed an experimental method with a one-group pretest-posttest design, involving 20 children selected through a saturated sampling technique. Data were collected through observation and analyzed using a paired sample t-test with SPSS version 23. The findings reveal a significant improvement in children's emergent reading ability after treatment. Prior to the intervention, 90% of children were categorized as Emerging and 10% as Not Yet Developed. Post-intervention, 70% were in the Very Well Developed category and 30% in the Developed as Expected category. The average score increased from 28.17 to 68.83. The t-test showed a t-value of 72.840 with a significance level of $0.000 < 0.05$, indicating a significant effect. The normalized gain result of 68.81% falls into the medium improvement category. This study contributes to the development of effective digital learning media to support early literacy in young children. The educational game offers an enjoyable, interactive alternative that aligns with early childhood learning characteristics.

Keywords : *Spelling Words Box, Emergent Reading, Early Childhood*

INTRODUCTION

Early childhood is an individual who is experiencing a rapid growth and development process and is even said to be a developmental leap, therefore early age is said to be the golden age, which is a valuable age compared to the next age. This age is a unique phase of life with distinctive characteristics, both physically, psychologically, socially, and morally (Rahmayanti et al., 2023). According to Kurnia (2017), the aspects of early childhood development that need to be optimized include five aspects of development. The five aspects are cognitive, social emotional, physical motoric, religious and moral values, and language. Of the five aspects of early childhood development, one important aspect to develop is the aspect of language development. The language aspect is very important to develop for early childhood, because through language children can express what is in their minds, can express their opinions and desires, and children can socialize with other humans around them (Salsabila et al., 2024). Language is also needed to train children in socializing, especially in interacting and communicating with other people, so that in carrying out these interactions children can use appropriate and easily understood language, and can be accepted by other people around them.

Isna (2019) emphasized that language is a very important aspect of development for early childhood. At this stage, children begin to learn to listen, speak, read, and write according to their level of development. Language acts as the main means of communication that allows children to interact and become part of their social group. The form of language can be oral, pictures, writing, gestures, or number symbols. Kurnia (2020) mentions four types of language, namely listening, speaking, writing and reading. One form of language development that will be discussed is reading ability. This will be discussed because the development of the era is increasingly advanced, so with this situation parents ask and recommend educators to introduce reading to children aged 5-6 years. Reading skills need to be developed in children. Because reading is a tool for getting information and reading is written language.

Children's reading skills need to be developed early on, because at an early age, children's development is influenced by how teachers develop children's reading skills. According to Bismawati et al., (2021), reading skills must be taught early on because children's abilities are at their peak and they absorb information more easily than children who are frustrated when they start learning, and reading from an early age tends to be easier to understand, read faster and more understanding than children who do not learn to read from an early age. Several previous studies have discussed the use of digital games in improving early childhood reading skills. Research Fatimah (2024) found that the use of computer-based educational games can improve letter recognition and phonetic skills in children aged 5-6 years. This is in line with research conducted by Jamaludin et al., (2023) which shows that interactive technology-based games can increase children's learning motivation and help them recognize and spell words more effectively. In addition, research by Roy & Talakua (2024) revealed that digital-based games provide a more enjoyable learning experience than conventional methods, so they can improve children's memory and understanding of basic words. Rahmadhani & Hartati (2024) research also highlighted that computer game-based learning has a positive impact on children's early literacy development, especially in terms of letter recognition and spelling skills.

These studies show a positive relationship between the use of technology-based games and the improvement of children's early reading skills. Therefore, this study aims to examine more specifically the effect of the desktop-based Spelling Words Box game on the early reading skills of children aged 5-6 years at TK Negeri Pembina Barat, Payakumbuh City. This game is designed as a desktop application and has a menu option to start the game of guessing letters from images, sounds and letter

boxes on the screen display to be able to train and develop aspects of early reading development in early childhood, the game is designed with a multisensory approach that combines visual, audio elements, and direct interaction. The spelling words box game adapts to various learning styles of children, both visual, auditory, and kinesthetic, with an attractive design and reward features that provide positive reinforcement. The spelling words box game can be used flexibly and repeatedly without time and place restrictions, the spelling words box game is also useful for educators and parents as an effective alternative learning game in supporting the language development of early childhood.

From the results of observations conducted by researchers on children aged 5-6 years at the Pembina State Kindergarten in Payakumbuh City, several problems were found related to children's early reading abilities, namely 1) Children cannot yet mention familiar letter symbols. 2) Children do not yet recognize the initial letter sounds of the names of objects around them. 3) Children cannot yet mention groups of images that have the same initial sound/letter. 4) Children do not yet understand the relationship between sound and letter shape. 5) Children cannot yet read their own names. 6) Children cannot yet write their own names. To stimulate early reading skills in children requires interesting games, one of the interesting games is Spelling Words Box.

Based on the background above, researchers can provide solutions to the phenomena encountered, so researchers raise this problem as research material with the title **"The Effect of Desktop-Based Spelling Words Box Games on Early Reading Skills of 5-6 Year Old Children at Pembina Barat State Kindergarten, Payakumbuh City"**

METHOD

The research to be conducted is an experimental research. The design of this experimental research uses a pre-experimental one group pre-test post-test design model, namely an experiment conducted on only one group without a comparison group (Mashuri et al., 2022). The variables used in this experimental research are:

Variable (X): Spelling words box game.

Variable (Y): Initial reading ability.

The place of this research was carried out at Children at Pembina Barat State Kindergarten, Payakumbuh City. This research was conducted in the even semester of the 2024/2025 academic year. The population studied in this study was class B4 with a total of 20 children aged 5-6 years at Children at Pembina Barat State Kindergarten, Payakumbuh City. To determine the sample, the researcher used a saturated sampling technique, namely a sampling technique in which all members of the population are used as samples because the population is relatively small. The sample used in this study was 20 children in group B4 aged 5-6 years at Children at Pembina Barat State Kindergarten, Payakumbuh city. In this study, the data collection method used was observation.

The data used in this study are primary data, namely data taken directly by respondents through observation of children to determine the effect of desktop-based spelling words box games on the early reading skills of children aged 5-6 years at Children at Pembina Barat State Kindergarten, Payakumbuh City. The data analysis technique used in this study is the T-Test analysis technique to see whether there is an effect of the Spelling words box game on the numeracy literacy skills of children aged 5-6 years before and after being treated.

RESULTS AND DISCUSSIONS

The Before the posttest research was conducted, the researcher first conducted initial observations using observation techniques on the reading skills of 5-6 year old children, to see the achievements in each category of increasing the reading skills of beginners in the class before being given treatment (pretest) which can be seen in the table below:

Table 1. Early Reading Ability in 5-6 Year Old Children at Pembina Barat State Kindergarten, Payakumbuh City Before Spelling Words Box Game Treatment (pretest)

No	Category	Range (In %)	F	%
1	BSB	76-100	0	0.00%
2	BSH	51-75	0	0.00%
3	MB	26-50	18	90.00%
4	BB	0-25	2	10.00%
Amount			**20**	
%				**100.00%**

Based on table 4.5, it is known that all children are at the beginning reading ability in the category of starting to develop 90.00% and not yet developed 10.00%. To see more clearly about the beginning reading ability, see the diagram below;

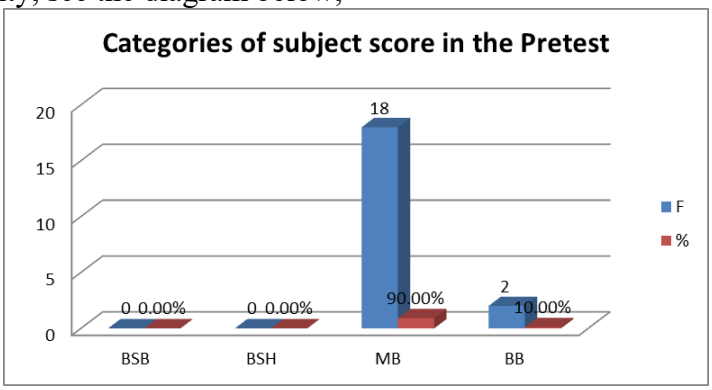


Figure 1. Subject Score Categories in Pretest

After the posttest research was conducted, there was an increase in the initial reading ability of children aged 5-6 years. To see the achievements in each category of increasing initial reading ability in the class after being given treatment (posttest), it can be seen in the table below:

Table 2. Early Reading Ability of 5-6 Year Old Children at Pembina Barat State Kindergarten, Payakumbuh City (Posttest)

No	Category	Range (In %)	F	%
1	BSB	76-100	14	70.00
2	BSH	51-75	6	30.00
3	MB	26-50	0	00.00
4	BB	0-25	0	00.00
Amount			20	
%				100.00

Based on table 2. it is known that the average child is in the early reading ability category of developing very well with a percentage of 70.00%. The rest are in the category of developing according to expectations with a percentage of 30.00%.

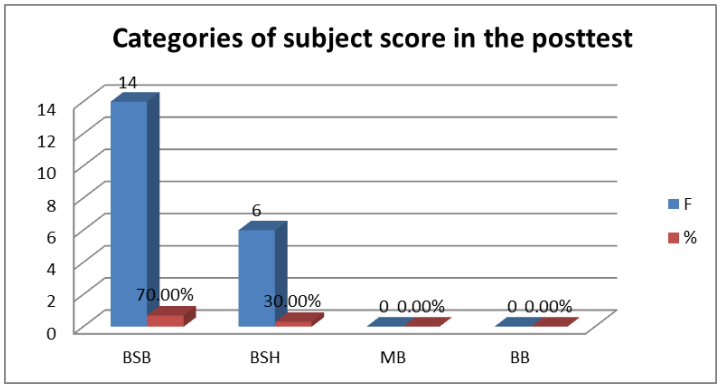


Figure 2. Subject Score Categories in Posttest

The comparison of pretest and posttest in this study used the SPSS ver 23 statistical test. With a paired sample t-test, this test was conducted to see if there was a significant difference before and after using the desktop-based spelling word box game on the initial reading ability found in the experiment. The data is said to have increased significantly if Sig <0.05. If Sig <0.05 then H_a is rejected, H_0 is accepted.

Before drawing a conclusion whether or not there is an effect of the desktop-based spelling words box game on the initial reading ability of children aged 5-6 years at Children at Pembina Barat State Kindergarten, Payakumbuh City, the following statistical hypothesis was formulated:

H_0 : There is no effect of the spelling words box game on the initial reading ability of children aged 5-6 years at Children at Pembina Barat State Kindergarten, Payakumbuh City.

H_a : There is an effect of the spelling words box game on the initial reading ability of children aged 5-6 years at Children at Pembina Barat State Kindergarten, Payakumbuh City.

The comparison of the pretest and posttest in the experimental class is as follows:

Table 3. Statistical Test (t-Test)

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std Deviation	Std.Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Pretest - Posttest	-10.70000	.65695	.14690	-11.00746	-10.39254	72.840	19	.000

Based on table 4.12 shows the value of the statistical test t_count of -72.840 two-sided test means absolute price, so (-) is not used (Sugiyono, 2010) so that t_count (72.840) because the sig. value 0.000 <0.05. So p can be concluded that there is an influence of the desktop-based spelling words box game on the early reading skills of early childhood.

In order to find out the hypothesis is accepted or rejected based on SPSS ver 23 data. It can be seen from the comparison of the results of t_count with the t_table value of the results of the t-test calculation, it can be seen that the results of t_count 72.840 are greater than t_table = 2.093 with dk as follows:

$$dk = (n-1)$$
$$= (20-1)$$
$$=19$$

With dk 19, t-table = 2.093 is obtained. Thus, H0 = rejected and Ha = accepted, which means that in this study there is an influence of desktop-based spelling words box games on children's early reading skills.

To find out how much influence the desktop-based spelling words box game has on the early reading skills of children aged 5-6 years at Pembina Barat State Kindergarten, Payakumbuh City.

Normalized Gain Test

Normalized gain test

$$G = \frac{Score\ Posttest - score\ pretest}{Score\ Ideal - score\ pretest} \text{ x } 100\%$$
$$G = \frac{383-169}{480-169} \text{ x } 100\%$$
$$G = \frac{214}{311} \text{ x } 100\%$$
$$G = 68{,}81\%$$

Description:

G = Difference between pretest and posttest scores
Posttest = score after treatment
Pretest = numeric score before treatment
100% = constant score

Looking at the results of using the G formula above, we can see the increase category of 68.81%, which is in the moderate category 30% < G < 70%.

CONCLUSIONS

Based on the results of research conducted at Children at Pembina Barat State Kindergarten, Payakumbuh City. it can be concluded that the desktop-based Spelling Words Box game is effective in improving the early reading skills of children aged 5-6 years. Before being given treatment, most children were still in the Starting to Develop category and had difficulty in recognizing letter symbols, initial sounds, and reading and writing their own names. After treatment, there was a significant increase, with 70% of children in the Very Well Developing category and 30% Developing According to Expectations. The results of the paired sample t-test showed a significant difference between the pretest and posttest scores (t_count = 72.840; sig = 0.000 <0.05), which indicates that the Spelling Words Box game has a positive influence on the development of children's early literacy. The success

of this media is supported by a multisensory approach, phonetics, and gamification elements that are in accordance with the learning characteristics of early childhood

REFERENCES

Adolph, R. (2016). Hubungan Bermain Balok Huruf dengan Membaca Permulaan Anak Usia Dini RA Al-Ikhlas Sukasadar Ciparay. 1–23.

Anggraini, E. S. (2021). Pola Komunikasi Guru Dalam Pembelajaran Anak Usia Dini Melalui Bermain. Jurnal Bunga Rampai Usia Emas, 7(1), 27. https://doi.org/10.24114/jbrue.v7i1.25783

Banamtuan, M., Baun, S., & Saetban, S. (2022). Prestasi Belajar Anak Petani. Discreet: Journal Didache of Christian Education, 2(1), 22–30. https://doi.org/10.52960/jd.v2i1.90

Bismawati, T., Kurnia, R., & Puspitasari, E. (2021). Perbedaan Kemampuan Membaca Permulaan Anak Laki-Laki dan Perempuan Usia 5-6 Tahun di TK Al-Munawarah Kecamatan Merbau Kabupaten Kepulauan Meranti. Jurnal Pendidikan Tambusai, 5(2), 2560–2568.

Busran, N. S. (2025). Penerapan Permainan Ular Tangga Digital Untuk Meningkatkan Penguasaan Kosakata Bahasa Inggris Anak Usia Dini.

Fatimah, L. H. (2024). Penerapan permainan dengan media wordwall untuk meningkatkan kemampuan pra- membaca anak usia 5-6 tahun Universitas Pendidikan Indonesia | repository.upi.edu | perpustakaan.upi.edu. 1–5.

Fitri, S. (2023). Pengaruh Permainan Kotak Alphabet Terhadap Kemampuan Mengenal Huruf Anak Usia 4–5 Tahun.

Hidayati, N. (2023). Pengenalan Kemampuan Membaca Awal pada Anak Usia Dini. Raudhatul Athfal: Jurnal Pendidikan Islam Anak Usia Dini, 7(1), 1–14. https://doi.org/10.19109/ra.v7i1.15561

Isna, A. (2019). Perkembangan Bahasa Anak Usia Dini. Al-Athfal, 2(2), 62–69.

Jamaludin, J., Nisa Fisca Kirana, A., Yusuf, F., Sahib, N., Muriati, S., Asriviana, R., Faidah, N., & Hasniah, S. (2023). Penerapan Media Pembelajaran Kreatif untuk Membantu Siswa Mengeja dan Membaca pada Kelas 1 SDN Pattingalloang 1 di Kota Makassar Implementation of Creative Learning Media to Help Students Spell and Read in Class 1 SDN Pattingalloang 1 at Makassar City. Khidmah: Jurnal Pengabdian Kepada Masyarakat, 4, 1–8.

Kurnia, R. (2017). Pengaruh Media Gambar terhadap Kemampuan Membaca Anak Usia 5-6 Tahun di TK Laboratorium FKIP Universitas Riau. Jurnal Educhild.

Kurnia, R. (2020). Efektifitas Media Dadu Putar Untuk Kesiapan Membaca Anak Usia Dini. Jurnal Pendidikan Anak Usia Dini. https://doi.org/https://doi.org/10.31849/paud-lectura.v4i01

Mardhotillah, H., & Rakimahwati, R. (2021). Pengembangan game interaktif berbasis android untuk meningkatkan kemampuan membaca anak usia dini. Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini, 6(2), 779–792. https://doi.org/10.31004/obsesi.v6i2.1361

Mashuri, H., Mappaompo, M. A., A, P., Rahman, T., Saparia, A., & Juhanis, J. (2022). Pengaruh Permainan Gerak Dasar dengan Circuit Training terhadap Perkembangan Motorik Kasar Anak. Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini, 6(6), 6583–6593. https://doi.org/10.31004/obsesi.v6i6.2213

Megawati, Afdal Jamil, Z., & A.A.Musyafa. (2023). Penerapan Media Kartu Bergambar Untuk Pengembangan Kemampuan Membaca Permulaan Anak Usia Dini. Jurnal DZURRIYAT Jurnal Pendidikan Islam Anak Usia Dini, 1(1), 36–46. https://doi.org/10.61104/jd.v1i1.21

Mufidah, I., & Maulidiyah, E. C. (2022). Pengaruh Game Belajar Membaca Terhadap Kemampuan Membaca Permulaan Usia 5-6 Tahun. Jurnal Kumara Cendekia, 10(2), 302–316.

Rahmadhani, S., & Hartati, S. (2024). Pengaruh Game Wordwall Terhadap Kemampuan Literasi Membaca Anak di TK IT Adzkia III Padang Pendidikan Guru Pendidikan Anak Usia Dini , Universitas Negeri Padang. Jurnal Pendidikan Tambusai, 8(1), 15486–15496.

Rahmayanti, E., Zulkifli, N., & Kurnia, R. (2023). Pengaruh Permainan Arrange Ball Letters Terhadap Penguasaan Kosakata Anak Usia 5-6 Tahun Di TK Negeri Pembina 1 Pekanbaru. Innovative: Journal Of Social Science Research, 3(4), 476–489.

Roy, Y. R., & Talakua, A. C. (2024). Implementasi Multimedia Pembelajaran Interaktif untuk Mengembangkan Kemampuan Membaca di SDN Ndata Berbasis Android. Sudo Jurnal Teknik Informatika, 3(2), 99–105. https://doi.org/10.56211/sudo.v3i2.562

Salsabila, S., Lyesmaya, D., Sari, D. A., & Gery, M. I. (2024). Upaya Peningkatan Kemampuan Membaca Permulaan melalui Media " Tutup Botol Alfabet " di TK Aisyiyah 3 Cipetir Sukabumi. 1613–1620.

Sofyan, H. (2015). Perkembangan Anak Usia Dini dan Cara Praktis Peningkatannya.

Turnip, H. A., & Wijayaningsih, L. (2022). Pengembangan Dadu QR Code untuk Alternatif Pengenalan Calistung Anak Usia 5 – 6 Tahun. Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini, 6(5), 4392–4404. https://doi.org/10.31004/obsesi.v6i5.2595