



GAMIFICATION MEDIA TO IMPROVE THE LITERACY AND SELF-DEVELOPMENT ABILITIES OF CHILDREN WITH SPECIAL NEEDS

Erna Megawati¹, Santi Nugraha², Priarti Megawanti,³ Firda Rafidah⁴, Septiana Harun⁵

Universitas Indraprasta PGRI Jakarta¹⁵

Email: 45megawatie@gmail.com¹, nugrahasanti99@gmail.com²

ABSTRACT

According to statistical data from the Coordinating Ministry for People's Welfare, the disability range for children aged 5-19 years is 3.3%, while the population at that age (2021) is 66.6 million. In the same year, data from the Ministry of Education and Culture showed that the number of students in the Special School (SLB) and inclusive school pathway was 269,398 children. Even though there are around 269,398 ABK who receive education, findings in the field show that the application of literacy to ABK has not received much attention. This research aims to determine the effect of the Android-based LiBi application on increasing basic literacy and self-development of ABK at Talenta Center School. This research is classified as quantitative descriptive research, which was carried out using research methods using the application of Research and Development (RnD) with the ADDIE model. The subjects of this research were 3 mentally retarded students out of a total of 8 mentally retarded students. The selection of the population as a sample in this study used the theory of Gay, Mills, and Airasian by taking 20% of the population because the population was relatively small. Based on the results of research that has been conducted, the use of the Android-based "LiBi" application in an inclusive education environment shows the feasibility of presenting an innovative approach that combines digital technology and a game-based learning approach in developing basic literacy skills and self-development for children with special needs.

Keywords: *learning media, self-development, literacy, mental retardation, gamification media.*

INTRODUCTION

According to statistical data from the Coordinating Ministry for People's Welfare, the disability range for children aged 5-19 years is 3.3%, while the population at that age (2021) is 66.6 million people. In this comparison, it can be seen that the number of children aged 5-19 years with disabilities is around 2,197,833 people. Still in the same year, data from the Ministry of Education and Culture showed that the number of students in the Special School (SLB) and inclusive school pathway was 269,398 children. In this way, the percentage of children with disabilities who take formal education is only 12.26%. Indonesia is ranked 70th out of 78 countries based on PISA (Program for International Student Assessment) (Ginting, 2021). This ranking is certainly not a proud achievement. Literacy is not only the property of

students without limitations but is also a right for Children with Special Needs (ABK). Even though there are around 269,398 ABK who receive education, findings in the field show that the application of literacy to ABK has not received much attention. Even though the literacy movement is not only intended for formal schools, but also inclusive schools so that they have abilities that are not much different (Trimurtini, et al. in Danuri *et al.*, 2022)

The application of basic literacy to children with special needs to be varied and carried out continuously in order to increase the child's motivation, interest and abilities. The writers found that the basic literacy skills of students with special needs were very lacking, they needed continuous repetition in learning, and they also had difficulty understanding things. Many ABK schools have not initiated to digitize their learning media and some even strictly forbid students from using gadgets while at school on the assumption that ABK have not been able to adapt to technology and the influence of technology can harm the ABK themselves. Apart from literacy issues, the ability that is also a focus in ABK learning is self-development. So far, self-development activities for ABK students have mostly used conventional approaches and have not integrated technology into their implementation. The writers also found similar findings at the Talenta Center School through interviews and observations. The writers found that the learning media currently used still relies on manual media and has never tried using digital-based media. The problems of student literacy skills, self-development and the availability of learning media prompted the writers to conduct research on improving basic literacy skills through the development of Android-based learning media called LiBi.

Applications are software used for special purposes such as document processing, window management, and games (Jogiyanto dalam (Kinaswara, 2019). Android is a Linux-based operating system for mobile devices that includes an operating system, middleware and applications (Azis et al., 2020). Android applications are used to manage data into information according to user needs. So, it can be said if application acts as a tool to process, operate input into output to fulfil the demand of the users.

Learning media is an important tool in teaching. Nurrita (Nurrita, 2018) and Firmadani (Firmadani, 2020) stated that learning media facilitates conveying messages, gaining better understanding, and achieving educational goals. The use of learning media in each learning session is necessary to facilitate understanding and increase student enthusiasm. Learning media as one of the learning processes holds important role in achieving learning objective.

Basic literacy involves abilities such as listening, speaking, reading, writing and calculating, as well as the ability to analyze, understand and draw personal conclusions (Sari, 2018). Hasan et al. (Hasan, Nurtrida, Arisah, & Nuraisyiah, 2022) agree that basic literacy is an important ability for students in daily multiliteracy activities such as reading, writing and calculating. Overall, basic literacy refers to fundamental skills in learning, including reading, writing, and arithmetic.

Self-development is educational assistance provided to crew members to carry out daily activities independently (Anggraini & Marlina, 2018). In line with this opinion, self-development is a way to shape the personality of crew members to have the ability to take care of themselves (Munyazanah (Zahro, 2018)). Based on these opinions, it can be concluded that self-development is a method, treatment, teaching and guidance carried out by teachers for ABK to be able to have the ability to take care of themselves independently.



Children with special needs (ABK) are children with abnormalities in sensory abilities, communication, behavior and knowledge (Efendi in (Rani & Jauhari, 2018)). According to the Directorate of Special Education (in (Faradina, 2016)), ABK are children who experience significant physical, mental-intellectual, social and emotional disorders compared to children their age, so they require special education services. In conclusion, ABK are different from normal children in various aspects such as physical, intellectual, social and emotional. They have characteristics that vary according to the type of disorder they experience.

Relevant studies on the development of media to improve literacy among children with special needs has been conducted, including studies focusing on game-based designs to develop cognitive skills and assistance with difficulties in reading, writing, and arithmetic (Zolkipli et al., 2023), learning media with an android-based gamification approach that helps ABK's learning process during the pandemic in creating a daily schedule for the child, selecting activities suitable for the child, and allowing space for collaboration between parent and child (Sagirani et al., 2020), and the use of audio-assisted relief-script media to improve the literacy of visually impaired students in Indonesia (Sudarma et al., 2024). These studies indirectly state that the development of innovative learning media with visual displays will attract ABK's interest in learning. However, there has not yet been significant development of android-based educational games as learning media to enhance students' basic literacy and independent learning skills. Therefore, this research filled the practical gap because there are no media products yet that integrate these two areas of focus and empirical gap because there are not yet many studies examining the effectiveness of integrating literacy and self-development for children with special needs.

Based on the relevant research above, this research has similarities in the form of developing learning media for ABK but there has been no research that has developed special applications for the 6 basic literacies (literacy, literacy, numeracy, science, finance, digital, and culture and citizenship) and development. themselves for the crew at once. Those six basic literacies become important competencies to be mastered. Those literacies can help ABK to connect with others. There are five reasons why ABK need to learn literacy, such as: (1) as a complement and perspective for children in oral learning, (2) motivating, helping and as a follow-up to direct learning, (3) the latest method which includes direct learning accompanied by practice so that it can be meaningful for children, (4) children have literacy challenges broader than previous knowledge, (5) literacy activities as an important foundation in lifelong literacy development (Kurniawati, 2018). Therefore, the novelty of this research is by addressing a practical and empirical gap: the absence of a medium that structurally integrates literacy and independence goals into a single intervention for children with special needs.

The writers developed a Gamification-based learning application that allows ABK to learn basic literacy and self-development through interesting features with the main characters Lita and BinBin. The game itself named after by those two characters as LiBi. The homepage of this application is divided into two menus, namely the basic literacy menu and self-development. Each menu is provided with an audio-visual combination through images, animated videos, text and music. Using property images that are familiar to ABK also helps students understand and connect with literacy and self-development activities in the application.

Based on the background above, the research problem formulation is: how is the validity of the Android-based LiBi application on improving basic literacy and the self-development of ABK at Talenta Center School? What is the effect the implementation of the Android-based LiBi application on increasing basic literacy and self-development of ABK at Talenta Center School?

The specific aims of this research are to describe the validity of the Android-based LiBi application on improving basic literacy and the self-development of ABK at Talenta Center School and to determine the effect of the Android-based LiBi application on increasing basic literacy and self-development of ABK at Talenta Center School.

METHOD

2.1 Research Design

This research was classified as quantitative descriptive research, which was carried out using research methods using the application of Research and Development (RnD) with the ADDIE model (Analysis, Design, Development, Implementation and Evaluation). This research was conducted from June to November 2023 at Talenta Center School, Jalan Kebagusan Dalam I, RT 006, RW 004, No. 24, Kebagusan, Pasar Minggu, South Jakarta, DKI Jakarta, 12520. This location was chosen because of literacy problems in accordance with the field of science being researched and the need for technology-based learning media for students with special needs. In the first month of activity, analysis is carried out, followed by the design stage which takes place in the first and second months. The Development phase begins in the third month of activities, while implementation is carried out during the third to fourth months. The evaluation was carried out in the fourth month after the implementation phase was completed.

The population used in this research was 8 students. The selection of the population as a sample in this study used the theory of Gay, Mills and Airasian (2009) by taking 20% of the population because the population was relatively small. The subjects of this research consisted of 3 participants. Participants' ages ranged from 7 to 19 years. Of all the subjects had a diagnosis of mental retardation (*Low Mental Retardation*) with an IQ value between around 50-69. All the subjects chosen because they are able to use mobile phone and could understand instructions given.

The research variables were X, Y1, and Y2. Variable X as an independent variable is the use of the LiBi application, variable Y1 is basic literacy, and variable Y2 is self-development. The research instruments used in this research were interviews, questionnaires, and tests. Interviews are conducted to dig up information according to needs. Questionnaires were carried out to test the feasibility and effectiveness of using the LiBi application, while tests were carried out to measure the increase in basic literacy skills and self-development of ABK.

2.3 Data Collection Techniques

The first data collection technique is giving pre-tests and post-tests to students. Tests are given before and after implementing the application in learning. This test has two parts, first a basic literacy test and second a self-development test. This test is used to measure children's abilities before the application is implemented and after the application is

implemented to determine the effect of the LiBi application on increasing basic literacy and self-development in mentally retarded children.

The observation stage was carried out from June 17 2023, guided by the concepts of children with special needs, basic literacy and self-development. This stage was carried out to confirm the respondent data which would be used as research subjects, then the results of this observation stage were used as material for determining the research instruments used. The interview stage was carried out with teaching staff and heads of foundations. This interview stage produces several inputs, such as; 1) in developing learning applications for young students, it is important to keep the focus on several colors, such as red, yellow, green, and blue, or even just use basic colors. This aims to make it easier for students to remember and memorize each level and content in the application. 2) After the application has been developed, it is important for teachers to be able to access it for free, so they can easily use it in the learning process. 3) The application should be able to be operated not only on mobile devices, but also on laptops, so that it is more flexible in use. Apart from teachers, parents of students should also be able to use this application, so that learning can continue at home and at school.

The questionnaire used in this research is content validation to measure students' basic literacy skills after using the LiBi application which includes basic literacy and self-development variables. including literacy, numerical, scientific, digital, financial, and cultural and civic literacy. The first variable, Reading and Writing Literacy, measures students' ability to read and write, with indicators including the ability to read the alphabet, read sentences, as well as understand and write information according to research by Irna (2019). The second variable, numerical literacy, measures students' understanding of numbers and their ability to perform simple additions according to Irna (2019). Other variables also measure different aspects of literacy in relevant contexts, such as scientific, digital, financial, and cultural and civic literacy. The preparation of this questionnaire is based on *IEP (Individualized Education Program)* student.

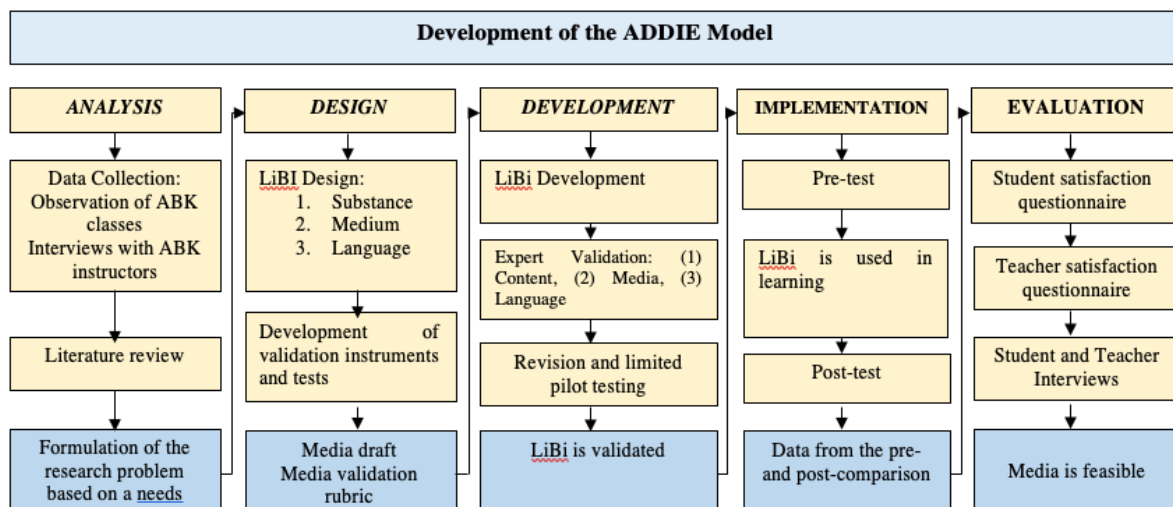


Figure 1. Research Procedure

The first step was analysis. This step was covering several acts start from need analysis, Individualize Education Project (IEEP), and suggest the research hypothesis. Based on the need analysis, the writers started to arrange instrument, lesson plan, and pre-posttest. The next step, the writers start to develop the media and conducted an assessment to check the media validity. While in implementation step, the writers did a pretest, application implementation, and posttest. Finally, the writers evaluate the implementation of LiBi.

Quantitative data analysis techniques are carried out using descriptive statistics. Data collected became the basis of drawing conclusions that apply to the general public, F test to see the significant influence of variable X on Y using the degree of confidence (α) 5% provided that the F value is greater than F_{table} then the alternative hypothesis states that variable X has a significant effect on Y, test *Wilcoxon* with the help of SPSS 26.0 to see how far two independent variables partially influence the variation of the dependent variable, and simple linear regression analysis to identify the influence of variable X on Y. In this research the writers have identified the influence of variable X on Y. The simple regression formula is $Y = a + bX$.

2.4 Data Analysis

A. Analysis

The writers conducted a literature review on basic literacy theory and game techniques, as well as analyzing IEP (Individualized Education Program) documents for students with special needs at the Jakarta Talenta Center School. Analysis of IEP documents is the basis for identifying basic literacy and self-development indicators needed in developing application instruments and content. Researchers conducted an analysis of comparative applications, focusing on aspects of appearance, content, features and overall user experience. The comparison application used as a reference is "Home Pin 2". The information obtained from this analysis is tailored to the individual needs and characteristics of students who have IEPs, so that the application can be tailored to each student's needs. The results of this comparative analysis produce varying levels of difficulty in the application, ranging from easy to difficult.

Table 1. Results of subject IEP analysis

No	MEMORY	BUILD YOURSELF
1	Understand simple calculation concepts	Communicate both ways
2	Memorize the sequence of ablution, intentions, prayers after ablution and short letters (Al-Fatihah to Al-Ikhlas)	Able to urinate and defecate independently, tidy up personal equipment and control emotions.
3	-	Eat and drink, and understand simple instructions

Source: Researchers Data (2023)

**B. Design**

At the design stage, the writers designed the appearance of the inclusion application based on analysis of comparative applications and basic literacy theory for students with intellectual disabilities. Game techniques such as clicking and sliding are used to create interactions that are easy to understand. Character design and visual elements are also considered for a more personalized experience. Assessment instruments have been prepared, including language, media and application assessments and have been tested by validators.

Table 2. Validation and Reliability Assessment

Language Aspects		Aspect Content		Media Aspect	
Validation	Reliabilit	Validatio	Reliabilit	Validatio	Reliability
	y	n	y	n	
0,875	0,8	0,625	1,0	0,92188	0,9

The Assessment Instrument and Rubric have the highest score of 4 points and the lowest score of 1 point. In the table above, the linguistic aspect validity test shows positive results with a value of 0.875, while the reliability of the language aspect is quite good with a score of 0.8. Then there is a content aspect validation value of 0.92188, with good reliability reaching 0.9. Finally, the application aspect has a lower validation value of 0.625, but excellent reliability with a value of 1.0.

Researchers have prepared a Program Implementation Plan for two weeks with a time allocation of 60 minutes for each session. The first week will begin with an introduction involving student preparation, apperception about literacy, and explanation of the objectives and indicators of the Pre-Test. The core activities in the first week include a Pre-Test for literacy, financial and numerical skills. The closing includes conclusions from the researcher and closing prayers and greetings. The second week will maintain a similar structure to the first week, with material changes to scientific literacy, culture and citizenship, and digital literacy. The conclusion and closing still follow the same pattern.

In this research, the pretest and posttest questions were adapted to the IEP of ABK Talenta Center Jakarta students and focused on basic literacy variables, each of which had a total of 36 questions. The pretest validation results showed a high value reaching 0.8287. Apart from that, the reliability value reached 1.0 indicating that this pretest can be used with a reliable status.

Table 3. Pretest Validation and Reliability Results

Pre-test	
Validity	Reliability
0,8287	1,0

C. Development

The inclusion application development stage involves creating the application according to the planned design. In this process, the writers assess the application using instruments and rubrics that have been validated by experts.

Table 4. Expert Assessment

Linguistic Aspects of Applications	Aspects of Applications	Aspects of Application Content	Aspects of Media Applications	Score
Validity	Reliability	Validity	Reliability	
0,85185	1,0	0,89744	0,9	81,3

The results of the assessment from experts in the language aspect show a validation of 0.85185, which indicates very good quality in the validity development stage. The reliability reaches a value of 1.0, indicating a high level of confidence in making applications from a linguistic perspective. Furthermore, the results of expert assessments in the application content aspect show a validation of 0.89744, also indicating very good quality in developing validity. The reliability reached 0.9, which shows a good level of confidence in the application creation process. Apart from that, in assessing the media aspect of the application, the table shows that the application obtained a total score of 26 out of a maximum of 32 which results in an average percentage of 81.3%. These results conclude that according to experts, the application is considered very feasible in the media aspect.

Herewith the images of LiBi:



Figure 1. The Cover of LiBi



Figure 2. Literacy and Self-Development Abilities Activity

D. Implementation

At the implementation stage, the inclusion application that has been developed is introduced to related parties, including teachers, students and school officials, with the aim of demonstrating the concept and potential of the application in supporting inclusive education at Talenta Center School. This step also involves coordination with the PKM-RSH team to ensure alignment and consistency in the presentation and use of the application.

The implementation phase includes several steps. First, the Pre-test stage, where the writers prepare the pretest questions those have been adapted to the IEP of ABK Talenta Center Jakarta students, totaling 30 questions and has passed the validation stage by three validators. Next, there was the Implementation stage for students, where the writers implemented the revised pretest questions for three ABK Talent Center Jakarta students. Finally, the Post-test stage was carried out after the PKM-RSH team carried out several calculations necessary for the evaluation. These stages as a whole are an integral part of the process of introducing and using inclusion applications in the context of inclusive education at Talenta Center School.

Table 5. Pretest and posttest results

Basic Literacy Observation Results					
No	No	Age (years)	PRE-TEST	POST-TEST	VALUE RESULTS
1	M.A.L	10	98,20	94,59	Decrease
2	A.R.A	16	95,50	100	Increased
3	A.N.M	19	95,50	97,30	Increased

Self-Development Observation Results

1	NO	Age (years)	PRE-TEST	POST-TEST	VALUE RESULTS
1	M.A.L	10	97,14	100	Increased
2	A.R.A	16	100	100	Endure
3	A.N.M	19	88,57	98,2	Increased

E. Evaluation

The evaluation stage is carried out to ensure the quality and effectiveness of the inclusion application. The evaluation process involves several aspects, including validation of the content, media and language of the assessment instruments that have been developed. Validation was carried out by inclusive education experts, linguists and lecturers in related fields. The data obtained from the evaluation will be the basis for improving the instrument and application content. Next, the basic literacy pretest and post-test instruments will be tested using the V Aiken method to ensure the validity and reliability of the instruments. Through a series of structured implementation stages, the research team succeeded in developing the inclusion application "LiBi Application" which aims to improve basic literacy skills and self-development of mentally disabled students at Talenta Center School. Each stage has an important role in ensuring that the resulting application meets student needs and the expected inclusive education standards.

F. Statistic test**a) Normality test****Table 6. Normality test of basic literacy abilities**

		Tests of Normality					
		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
Basic Pretest	Literacy	,385	3	.	,750	3	,000
Basic Posttest	Literacy	,175	3	.	1,000	3	,998

Based on the results of the normality test for basic literacy variables using SPSS 26.0.0 above, the sig value is shown *pre-test* < 0.05 , it can be concluded that the basic literacy variable data does not follow a normal distribution. However, the sig value at *post-test* > 0.05 , then the data can be concluded *post-test* flat literacy with normal distribution.

Table 7. Test the normality of self-development ability

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Self-Development Pretest	,292	3	.	,923	3	,464
Self-Development Posttest	,385	3	.	,750	3	,000

Based on the results of the normality test for self-development variables using SPSS 26.0.0 above, the sig value is shown *pre-test* > 0.05, it can be concluded that the data on the self-development variable is normally distributed. However, value *post-test* < 0.05, it can be concluded that the self-development variable data does not follow a normal distribution.

b) Hypothesis testing

This research hypothesis test uses non-parametric statistical methods. The test used in this research is Test *Wilcoxon* which aims to test whether there are significant differences between two groups of data that do not follow a normal distribution. The data tested is the average difference before and after (pre and post). The condition for carrying out this test is that the data is not normally distributed with an interval or ratio data scale. Basis for decision making Wilcoxon test When the probability value of Asym.sig 2 fails <0.05 then there is a difference in the average. When the probability value of Asym.sig 2 failed > 0.05 then there is no difference in the average.

Table 8. Hypothesis test of basic literacy abilities

Test Statistics ^a			
		Basic Posttest - Basic Literacy Pretest	
WITH		-,535 ^b	
Asymp. Sig. (2-tailed)		,593	
a. Wilcoxon Signed Ranks Test			
b. Based on negative ranks.			

In the table above, the Asymp. Sig. (2-tailed) is 0.593 > 0.05, this indicates that the difference between the Basic Literacy Posttest and Basic Literacy Pretest is not statistically significant.

Table 9. Test the hypothesis of self-building ability

Test Statistics ^a			
			Self-Development Posttest - Self- Development Pretest
WITH			-1,342 ^b
Asymp.	Sig.	(2-	,180
tailed)			
a. Wilcoxon Signed Ranks Test			
b. Based on negative ranks.			

In the table above, the Asymp. Sig. (2-tailed) is $0.180 > 0.05$, this indicates that the difference between the Self-Development Posttest and Self-Development Pretest is not statistically significant.

RESULTS AND DISCUSSION

From statistical data, the results of this study show that children's abilities without media and with media are in the very good category in terms of grades *pre-test* and *post-test*. However, there was a not very significant increase in the pre-test and post-test scores in basic literacy abilities and self-development abilities of students with special needs who used the "LiBi" application at Talenta Center School. The results of statistical analysis show H_0 in *pre-test* and *post-test* caused by unfavorable subject situations and changes in mood. Nevertheless, these findings indicate that the "LiBi" application has the potential to be an effective learning medium in improving the basic literacy skills of students with special needs. The results of the analysis also show that this research also supports previous studies such as Ardianti, et.al (Ardianti, Hartono, & Wibowo, 2023) who examined the development of Android-based letter recognition learning media for mentally retarded children which showed effectiveness in learning Indonesian as well as Sadidah and Wijaya's research (Sadidah & Wijaya, 2016) through application of user experience design in mathematical calculation applications for children with intellectual disabilities which has been proven to be effective. Besides effective for gaining cognitive competence, the using of media is also confirmed to gain the motoric ability of special need students (Alfirah and Gustiana, 2024). However, it is recognized that further evaluation and improvements in application design and teaching methods are still needed to achieve a more significant level of improvement. This strengthens the argument that the "LiBi" application must continue to be developed and improved so that it can provide greater benefits for the development of inclusive education in the future.

CONCLUSION

Based on the results of research that has been conducted, the use of the Android-based "LiBi" application in an inclusive education environment shows the feasibility of presenting an innovative approach that combines digital technology and a game-based learning approach in developing basic literacy skills and self-development for children with special needs.



However, in terms of effectiveness, the results of the increase from pretest to posttest showed an increase, but did not reach a sufficient level of significance. Therefore, it is necessary to carry out further evaluation regarding the implementation of the "LiBi" application. Based on the results of statistical tests, the difference between the posttest and pretest scores is not statistically significant, which indicates that there is not sufficient evidence to support the claim that the use of the Android-based "LiBi" application has a significant influence on increasing the self-development abilities of children with special needs at the Talenta Center School, at least based on data that has been tested.

ACKNOWLEDGMENT

The authors would like to express their sincere gratitude to Allah SWT, Universitas Indraprasta PGRI, and to all parties who has assisted in this research. The authors also extend their appreciation to the principal, teachers, and students Talenta Center School for their cooperation and participation during the data collection process.

REFERENCES

- Anggraini, I., & Marlina, M. (2018). Peningkatkan keterampilan bina diri melalui teknik shaping pada siswa tunagrahita ringan. *Jurnal Penelitian Pendidikan Khusus*, 6(2), 186–191.
- Ardianti, D., Hartono, R., & Wibowo, S. (2023). Pengembangan Media Pembelajaran Pengenalan Huruf Berbasis Android Bagi Anak Tunagrahita. *Jurnal Teknologi Pendidikan*, 12(2), 144–154.
- Azis, N., Pribadi, G., & Nurcahya, M. S. (2020). Analisa dan Perancangan Aplikasi Pembelajaran Bahasa Inggris Dasar Berbasis Android. *IKRA-ITH INFORMATIKA: Jurnal Komputer Dan Informatika*, 4(3), 1–5.
- Faradina, N. (2016). Penerimaan diri pada orang tua yang memiliki anak berkebutuhan khusus. *Psikoborneo: Jurnal Ilmiah Psikologi*, 4(1).
- Firmadani, F. (2020). Media pembelajaran berbasis teknologi sebagai inovasi pembelajaran era revolusi industri 4.0. *KoPeN: Konferensi Pendidikan Nasional*, 2(1), 93–97.
- Hasan, M., Nurtrida, N., Arisah, N., & Nuraisyiah, N. (2022). Implementasi Budaya Literasi Melalui Optimalisasi Perpustakaan di Sekolah Dasar. *Jurnal Eduscience*, 9(1), 121–133.
- Kinaswara, T. A. (2019). Rancang Bangun Aplikasi Inventaris Berbasis Website pada Kelurahan Bantengan. *Prosiding Seminar Nasional Teknologi Informasi Dan Komunikasi (SENATIK)*, 2(1), 71–75.
- Kurniawati, R. D. (2018). *Pelaksanaan Gerakan Literasi Sekolah (GLS) Di SMPLB-B YPTB Malang*.
- Nurrita, T. (2018). Pengembangan media pembelajaran untuk meningkatkan hasil belajar siswa. *Jurnal Misykat*, 3(1), 171–187.

- Rani, K., & Jauhari, M. N. (2018). Keterlibatan orangtua dalam penanganan anak berkebutuhan khusus. *Jurnal Abadimas Adi Buana*, 2(1), 55–64.
- Sadidah, A., & Wijaya, A. (2016). Developing mathematics learning set for special-needs junior high school student oriented to learning interest and achievement. *Jurnal Riset Pendidikan Matematika*, 3(2), 150–161.
- Sari, I. F. R. (2018). Konsep dasar gerakan literasi sekolah pada permendikbud nomor 23 tahun 2015 tentang penumbuhan budi pekerti. *Al-Bidayah: Jurnal Pendidikan Dasar Islam*, 10(1), 89–100.
- Sudarma, I. K., Sujana, I. W., Dewantara, K. A. K., Ardiyasa, I. N. S., & Sudiartini, N. P. K. D. (2024). Breaking Barriers: Empowering Visual Impaired Students with Audioassisted Balinese Script Relief Media for Enhanced Literacy at a Special Public School. *International Journal of Language Education*, 8(2), 307–321.
- Zahro, I. F. (2018). Pengaruh bina diri untuk meningkatkan kemandirian anak tunagrahita SDLBN Sumbang III Bojonegoro. *Attanwir: Jurnal Keislaman Dan Pendidikan*, 9(2), 18–28.
- Zolkipli, N. Z., Rahmatullah, B., Mohamad Samuri, S., Árva, V., & Sugiyo Pranoto, Y. K. (2023). “Leave No One Behind”: A Systematic Literature Review on Game-Based Learning Courseware for Preschool Children with Learning Disabilities. *Southeast Asia Early Childhood*, 12(1), 79–97.