



Application of SIBEL (Tutoring System) in Improving Literacy and Numeracy Skills of Grade 5 and 6 Students of SD Negeri Botok for ANBK Exam Preparation

*Aprillia Sinda Dinningrum, Laili Arin Ramadhani

Universitas Negeri Surabaya, Surabaya, Indonesia



Article Info:

Received 28 February 2024

Revised: 28 March 2024

Accepted: 27 April 2024

Published: 28 May 2024

Keywords:

Tutoring

Literacy

Numeracy

Elementary School Students

ANBK Exam

ABSTRACT

SIBEL (Tutoring System) is a community service program to assist 5th and 6th-grade students of SD Negeri Botok, Karas District, Magetan Regency, in preparing for the ANBK (Computer-Based National Assessment) exam. This program is focused on improving students' literacy and numeracy skills through structured guidance. The purpose of this program is to create a learning awareness environment at SD Negeri Botok, especially for 5th and 6th-grade students, to help 5th and 6th-grade students improve their ability to do literacy and numeracy problems and to help 5th and 6th-grade students prepare well for the ANBK exam. The implementation of the program took place from 4 September to 30 November 2023 and involved the use of pretest and post-test to measure the improvement of students' abilities. The results of the study showed a significant improvement in students' literacy and numeracy skills, as well as the creation of a learning-conscious environment that supports the success of the program. This SIBEL program has proven effective in preparing students for the ANBK exam.

INTRODUCTION

The Computer-Based National Exam (ANBK) is a form of evaluation used to assess the quality of education in Indonesia. In contrast to the previous national exam, ANBK focuses more on two basic competencies essential for student development: literacy and numeracy (Munawar, 2022). Literacy competencies include students' ability to understand and interpret reading texts, while numeracy competencies focus on students' ability to solve fundamental math problems (Genc & Erbas, 2019). This evaluation is essential because the results of the ANBK exam are used to map the quality of education at the primary and secondary school levels, and it is one of the references in determining education policy in Indonesia.

However, for schools in areas with limited educational resources, such as SD Negeri Botok, located in Karas District, Magetan Regency, preparing for the ANBK exam is a challenge. Students in these areas often face limited access to adequate educational facilities, including tutoring and learning resources, to help them prepare well for exams. Based on the initial observations that have been carried out on grades 5 and 6 at SD Negeri Botok, several obstacles that need to be overcome are found, including students who have not been able to work on math problems in the form of story problems, and a lack of interest and enthusiasm for tutoring in students in grades 5 and 6, so that there are students who go home during tutoring.

For this reason, systematic efforts are needed to improve students' literacy and numeracy competencies. One solution can be implemented through a structured and directed tutoring program. SIBEL (Tutoring System) is present as a community service program that aims to help 5th and 6th-grade students of SD Negeri Botok understand and deepen literacy and numeracy materials in preparation for the ANBK exam. This program is designed to overcome these challenges by providing guidance focused on



strengthening reading and comprehension skills (literacy), as well as skills in solving math problems (numeracy) (Winter, 2019).

Through guidance based on practice questions, discussions, and interactive methods, the SIBEL program is expected to impact students' academic abilities significantly. Not only that, this program also aims to create a learning awareness environment in schools, which encourages students to be more active and motivated in learning and fosters confidence in facing upcoming exams (McHone, 2020). Referring to the ANBK exam question standards, the SIBEL program uses pretest and post-test to measure student progress in mastering literacy and numeracy competencies (Wijaya, 2022). In addition, questionnaires are given to students and teachers to get feedback on the effectiveness of the program. The program aims not only to improve test results but also to provide students with skills they can use daily.

Therefore, this article will explain in detail the implementation of the SIBEL program at SD Negeri Botok, which involves 5th and 6th-grade students, and how this program contributes to improving students' literacy and numeracy skills in preparation for the ANBK exam. In addition, this article will also discuss the results obtained, the challenges faced during implementation, and recommendations for future development of similar programs.

METHOD

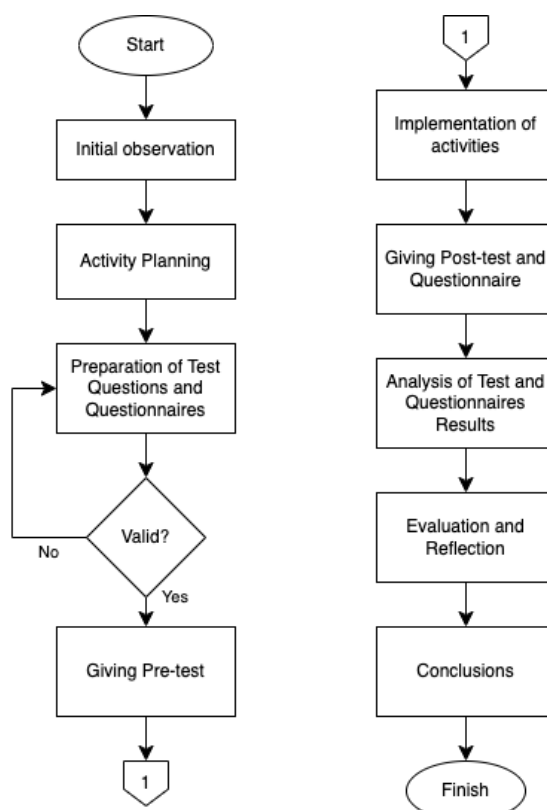


Figure 1. Program Implementation Flow (Veronica & Nasution, 2022).

The SIBEL program is held to understand and deepen literacy and numeracy materials for grades 5 and 6 in preparing and correctly facing the ANBK exam. The program is part of the KKN activity for Independent Teaching Assistance for Independent Learning



Campus (MBKM). The purpose of this program is to create a learning awareness environment at SD Negeri Botok, especially for 5th and 6th-grade students, to help 5th and 6th-grade students improve their ability to do literacy and numeracy problems and to help 5th and 6th-grade students prepare well for the ANBK exam.

This program has been held from 4 September to 30 November, 223 at SD Negeri Botok, Keras District, Magetan Regency. In its implementation, KKN-T teaching assistant students on duty in Botok Village, especially at Botok State Elementary School, play the designer and tutor role in this SIBEL program. The tools developed and used in this program are pretest, post-test, and satisfaction questionnaires in the form of questionnaires. All stages of the SIBEL program are summarized in the flow chart shown in Figure 1.

The SIBEL program is implemented through several continuous steps to ensure success in improving the literacy and numeracy skills of grade 5 and 6 students of SD Negeri Botok. The flow of implementing this program can be explained through several stages depicted in the flowchart in Figure 1, namely:

Stage 1: Program Preparation

There is a program planning process and initial data collection at this stage. The program begins with careful planning, including preparing goals, teaching methods, and tools (such as pretest and post-test questions). At this stage, the devotees (teachers and program developers) ensure that the materials prepared follow the students' needs and the ANBK exam standards. Before the guidance begins, a pretest is carried out to measure students' initial abilities in literacy and numeracy. This pretest serves as a baseline to see the extent of students' understanding of the material to be discussed during the guidance.

Stage 2: Implementation of Guidance

After the preparation stage, guidance is carried out intensively and structured, focusing on literacy and numeracy development. Learning is done through question-and-answer sessions, practice questions, and group discussions. Teaching is focused on materials relevant to the ANBK exam, especially in terms of reading and comprehension skills and the ability to solve fundamental math problems. Teaching is done interactively by allowing students to ask questions and discuss so that they can understand more complex concepts better. In addition, students are also given a variety of practice questions to improve their ability to complete exam questions.

Stage 3: Program Evaluation

After several guidance sessions, a post-test was carried out to measure the improvement of students' abilities. This post-test is like the pretest but emphasizes the material taught during the program more. Comparing the pretest and post-test results can be analyzed to determine how much students have improved their literacy and numeracy skills. In addition, a questionnaire is given to teachers to get feedback on the success of the program. This questionnaire helps service members find out whether the method applied has been effective, as well as how much change students have experienced in readiness to face the ANBK exam. This feedback is also used to identify areas that still need improvement in the program's implementation.



Stage 4: Analysis and Reporting

After the post-test and questionnaire were collected, an analysis was carried out to see if there was a significant improvement in students' literacy and numeracy skills. The results of this analysis are also used to evaluate the effectiveness of the program. Based on the results of the study, a final report is prepared that includes key findings, recommendations for improvement, and documentation related to the implementation of the program. This report serves as a reference for the development of similar programs in the future.

RESULT AND DISCUSSION

The SIBEL program is an additional means of learning that students get outside of school hours to understand better and deepen numeracy literacy material. This Tutoring System is aimed at students in grades 5 and 6 of SDN Botok who will face ANBK. Evaluation of the implementation of the SIBEL program was obtained by observing the comparison of pretest and post-test results of students who participated in SIBEL activities. The test results are averaged and shown in Table 1.

Table 1. Average Pretest and Post-test Scores

It	Class	Number of students	Average Pretest	Average Post-test
1	Grade 5	14 people	46.54	86.31
2	Grade 6	16 people	47.00	89.36

From the results of the paired sample test using SPSS, as shown in Figure 3, it was found that the value of the sig two-tailed was 0.000. If the sig value < 0.05 , it can be stated that there is a fundamental difference between the learning outcomes in the pretest and protest SIBEL data for grade 5.

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
				Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Nilai PreTest - Nilai Posttest	-39.692	7.664	2.126	-44.323	-35.061	-18.674	12	.000

Figure 3. Results of the T-Test in Grade 5.



Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Nilai PreTest - Nilai Posttest	-41.357	7.334	1.960	-45.592	-37.123	-21.100	13	.000

Figure 4. Results of the T-Test in Grade 6.

From the results of the paired sample test using SPSS, it was found that the value of sig two-tailed was 0.000. If the sig value < 0.05 , it can be stated that there is a fundamental difference between the learning outcomes in the pretest and protest SIBEL data for grade 6.

Based on the pretest and post-test results, the development of student learning outcomes can be known. The results show that the SIBEL program makes students understand numeracy literacy problems, especially in numeracy problems on materials that students have not yet understood, as evidenced by a significant increase in student learning outcomes. So, overall, the SIBEL program is quite effective as an additional learning program outside of school that can prepare students for the ANBK exam and help them understand numeracy questions.

In addition to observing the comparison of student pretest and post-test results, the evaluation of the SIBEL program was also seen from the teacher satisfaction questionnaire where the 5th and 6th-grade homeroom teachers filled out this questionnaire because the SIBEL program is specifically for grades 5 and 6 at SDN Botok. The warm sample of teachers' satisfaction with the SIBEL program is shown in Figure 5.

**ANGKET KEPUASAN GURU SDN BOTOK
TERHADAP BIMBINGAN BELAJAR (BIMBEL)**

A. Identitas Responden
Nama Guru : Kanit Ari P., S.Pd.

B. Petunjuk Pengisian
1. Isilah identitas pada lembar jawaban yang telah disediakan!
2. Berilah tanda ceklist (✓) pada pernyataan-pernyataan di bawah ini sesuai dengan pendapat Bapak/Ibu guru
3. Alternatif jawaban dari pernyataan tersebut menggunakan skala jawaban sebagai berikut :
1 : Sangat tidak puas
2 : Tidak puas
3 : Netral
4 : Puas
5 : Sangat puas

No.	Pernyataan	Jawaban				
		1	2	3	4	5
1.	Apakah setelah mengikuti program ini dapat meningkatkan pemahaman peserta didik kelas 5 dan 6 terhadap literasi numerasi ?				✓	
2.	Sejauh mana program ini dapat memperkenalkan peserta didik terhadap soal-soal AKM?				✓	
3.	Apakah dengan program BIMBEL ini peserta didik dapat menjawab soal-soal AKM dengan metode – metode penyelesaian yang lebih efisien?				✓	
4.	Apakah dengan program ini peserta didik dapat meningkatkan motivasi belajar?				✓	
5.	Apakah pelaksanaan program ini efektif ?				✓	
6.	Apakah materi yang kita sampaikan dapat bermanfaat ?				✓	
7.	Apakah diadakan pretest dan post test dalam					✓

program ini dapat memudahkan peserta didik untuk mengukur kemampuannya?

Tuliskan kritik & saran Bapak/Ibu Guru setelah mengikuti program "BIMBEL" di bawah ini !
Sebaiknya lebih ditingkatkan lagi dan disesuaikan metode pelajaran yang diterapkan untuk anak Sekolah Dasar.

Tuliskan kesan dan pesan Bapak/Ibu Guru setelah mengikuti program "BIMBEL" di bawah ini !
Terimakasih untuk para Mahasiswa dengan semangat yang luar biasa membimbing siswa-siswi SDN Botok.

Figure 5. Sample satisfaction questionnaire for the SIBEL program.



Figure 6. SIBEL Program Documentation.

Based on the results of the evaluation given by the 5th and 6th-grade homeroom teachers on the Tutoring System (SIBEL) program provided by KKN students to the 5th and 6th-grade students of SDN Botok, it is known that this program has a positive impact on student learning activities. The understanding of 5th and 6th grade students related to literacy and numeracy questions is increasing. The students are increasingly ready to face AKM questions. Besides that, with this SIBEL, students are more motivated to learn. Figure 6 shows the documentation of the implementation of the SIBEL program at SD Negeri Botok Magetan.

CONCLUSION

The SIBEL program has succeeded in improving the literacy and numeracy skills of grade 5 and 6 students at SD Negeri Botok in preparation for the ANBK exam. Based on the results of the pretest and post-test, as well as the teacher's satisfaction score, it can be concluded that this program has a positive impact in helping students understand and master the material being tested. In addition, this program has also succeeded in creating a learning awareness environment that supports students' motivation to study harder to prepare for AKM. The program can be expanded to include more students and other classes and can be applied to other schools with similar situations. Increasing guidance duration and adding interactive learning methods can improve more optimal results.

REFERENCES

- Genc, M., & Erbas, A. K. (2019). Secondary mathematics teachers' conceptions of mathematical literacy. *International Journal of Education in Mathematics, Science and Technology*, 7(3), 222-237. <https://doi.org/10.1088/1742-6596/1157/4/042088>
- McHone, C. (2020). *Blended learning integration: Student motivation and autonomy in a blended learning environment* (Doctoral dissertation, East Tennessee State University). <https://dc.etsu.edu/etd/3750>
- Munawar, M. (2022). Merdeka Belajar. *Jurnal Pedagogy*, 15(2), 137-149. <https://jurnal.staimuhblora.ac.id/index.php/pedagogy/article/view/144>
- Veronica, D., & Nasution, E. Y. P. (2022). Program bimbingan belajar (Bimbel) matematika untuk siswa SD di Desa Semerap pada era pandemi Covid-19. *Madani: Indonesian Journal of Civil Society*, 4(1), 1-8. <https://doi.org/10.35970/madani.v4i1.771>



- Wijaya, H., Maryanti, R., Wulandary, V., & Irawan, A. R. (2022). Numerical minimum competence assessment for increasing students' interest in mathematics. *ASEAN Journal of Science and Engineering Education*, 2(3), 183-192.
<https://doi.org/10.17509/ajsee.v2i3.38660>
- Winter, L. (2019). *Embedded numeracy teaching practices at an Institute of Technology: Vocational tutors' characterizations of embedding numeracy and related professional development* (Doctoral dissertation, The University of Waikato).
<https://hdl.handle.net/10289/12753>

* Aprillia Sinda Dinningrum (Corresponding Author)

State University of Surabaya,

Jl. Ketintang, Ketintang, Gayungan District, Surabaya, East Java 60231

Email: aprilliasinda.21014@mhs.unesa.ac.id
