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Training on Basic Mathematics for 12th Grade Students of SMA Pasundan Majalaya in Preparation for the 2024 SNBT

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Abstract

Basic math training plays an important role in preparing students for the National Selection Based Test (SNBT), which is one of the entry pathways to public universities in Indonesia. This study aims to evaluate the effectiveness of academic ability test training in improving the readiness of XII grade students of Pasundan Majalaya High School to face SNBT 2024. The research method used is descriptive quantitative with a case study approach. The study population was all XII grade students of Pasundan Majalaya High School who participated in the training program. Data were collected through observations and tests conducted before and after the training. Data analysis was conducted to measure the improvement of students' academic ability and readiness. The results showed that the academic proficiency test training implemented at Pasundan Majalaya High School was effective in improving students' pre and post test results. There was a significant increase in proficiency test scores through pre and post test results. In addition, the training also helped students in developing time management skills, problem solving strategies, and critical thinking skills. The findings suggest that structured and comprehensive training can significantly improve students' academic readiness, thus helping them to face SNBT more confidently and competitively. This research is expected to contribute to the preparation of Pasundan Majalaya High School students for college entrance selection.

Keywords: Mathematics, SNBT, Class XII students, Majalaya

1. Introduction

Education has an important role in improving the quality of human resources and determining the future of the nation. One of the most crucial levels of education in the Indonesian education system is upper secondary education, especially for grade XII students who are preparing to continue to college. The public university entrance selection process known as National Test-Based Selection (SNBT), previously known as UTBK SBMPTN, is a defining moment for students in pursuing their academic goals (Johan & Harlan, 2014; Smith et al., 1998). SMA Pasundan Majalaya as one of the educational institutions that has a high commitment to improving the quality of education of its students, realizes the importance of careful preparation in facing SNBT. Therefore, this training program is specifically designed for grade XII students. This program aims to improve students' academic readiness in facing various types of questions, especially mathematics that will be tested in SNBT 2024, so that they can compete better and increase their chances of being accepted in the desired public universities (Yangüez et al., 2023).

Academic aptitude test training is a form of educational intervention that aims to help students develop the skills and knowledge needed to succeed in selection examinations (McDonald et al., 2001). According to constructivist learning theory, effective learning is one that allows students to construct their own knowledge through direct experience and reflection (Hein, 1991; Bada & Olusegun, 2015). In the context of academic aptitude test training, students are given the opportunity to practice working on questions similar to those they will face in the SNBT, as well as get constructive feedback to improve their understanding. Aptitude test training is particularly important as the SNBT is a highly competitive examination that determines students' academic future (Robinson, 2012). It measures various aspects of students' academic abilities, including verbal, quantitative and reasoning skills. According to research conducted by Santrock (2014), intensive and structured practice can improve students' ability to solve standardized test questions. This training is more specific to basic math.

In addition, basic math training also serves as a tool to identify students' individual weaknesses and strengths. Through this process, trainers can design more personalized and effective learning strategies, tailored to the needs of individual students. This is in line with Slavin's (2012) view that personalized learning approaches can improve learning effectiveness and student learning outcomes. The introduction and training activities in preparation for SNBT 2024 are conducted face-to-face. The tips that will be given will help students of class XII IPA and IPS SMA Pasundan Majalaya when solving SNBT 2024 questions. Through the introduction and training of SNBT questions, it is hoped that after this PKM activity takes place all participants can complete the exam and master the techniques, methods, and strategies for answering SNBT questions properly. The purpose of this activity is to introduce and train basic math problems in preparation for SNBT 2024 for high school students in Class XII of Pasundan Majalaya High School. The introduction and training activities of the tested questions have benefits for class XII students, namely improving their ability to work on basic math problems, so that participants are better able to work on questions and manage their time properly to face SNBT 2024.

2. Materials and Methods

The introduction and training of basic math problems in preparation for SNBT 2024 for class XII students was held at Pasundan Majalaya High School. This activity was held on April 24, 2024. The target of this service activity is all grade XII students who are present at the event. There were 46 class XII students who participated in the training from IPA and IPS. The method of implementation in training activities consists of several stages as in Figure 1.

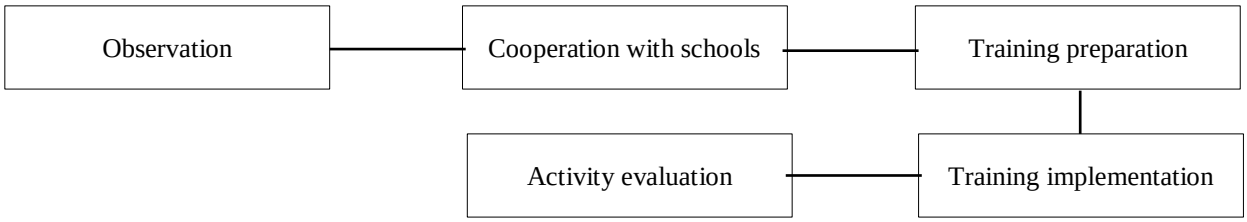

Figure 1: Activity Implementation Method

This activity began with observations at the partner location. Next, the team made agreements with partners regarding procedures and procedures for implementing activities and preparing materials related to basic math problem training. The method applied was in the form of hands-on training and problem solving became the main priority rather than just delivering material. This method is quite effective because in order to understand the strategies for solving basic math problems that are introduced, more practice in discussing problems is needed. However, before the training, the participants took a pretest. Then, they discussed the pre-test questions and provided tips and tricks for solving the problems. Evaluation of students was carried out at the last stage by giving a posttest.

3. Results and Discussion

3.1. Observation

The initial activity began with the team conducting an observation at SMA Pasundan Majalaya. The purpose of the observation was to obtain accurate information regarding the preparation of 12th-grade students for the 2024 SNBT. During the observation phase, information was obtained from the school, represented by the student affairs department, indicating that 12th-grade students had not prepared well for the 2024 SNBT. This was due to the lack of facilities for students to adequately practice. Additionally, students were only learning routine materials from textbooks in class, while the SNBT questions are quite different from the material covered in class lessons.

3.2. Collaboration with Partner

After the observation, the team established a partnership with relevant partners for the training activities. The team made agreements with the school regarding the procedures for conducting the activities. First, the team designed a schedule and determined the location for all 12th-grade classes at SMA Pasundan Majalaya, then discussed the proposed schedule with the school. Once the schedule and location were agreed upon, the school informed all students about the planned activities.

3.3. Training Preparation

After the schedule was agreed upon by the team and the school, the team proceeded with the preparations. The preparations included organizing administrative tasks such as attendance lists, preparing frequently appearing SNBT questions based on previous years' references, creating pretest questions, developing training materials consisting of question discussions along with tips and tricks for solving them, and creating posttest questions.

3.4. Training Implementation

The opening activity was held on Wednesday, April 24, 2024. The event was inaugurated by representatives from the school and the university conducting the PKM program.

Figure 2: Opening Activity

After the opening ceremony, the students were directed to enter the designated classrooms. Each mathematics lecturer introduced themselves to the students present in the class, followed by administering a pretest to the students. The purpose of this pretest was to assess the students' familiarity with basic mathematics problems and to provide a foundation for the team in preparing the material or topics to be introduced. Conducting a pretest is necessary to inform the instructors about the participants' initial knowledge (Yuliana et al., 2023). According to Nicholls (1978), a pretest also provides an initial understanding of the participants' grasp of the material to be taught. After the initial test was administered, training sessions were conducted with direct face-to-face guidance in the classroom according to the predetermined schedule.

The training activities were conducted by the team according to the schedule that had been prepared and agreed upon by the school. Training on solving basic mathematics problems was necessary for 12th-grade students as part of their preparation for the 2024 SNBT, which would be held in May 2024. During the activities, the team provided all participants with tips and tricks for answering basic mathematics questions within the allotted time. One of the strategies shared was to tackle the easier questions first in each section of the test.

The team conducted the training by providing direct guidance in the classroom. This approach aligns with the opinion of Okumus (2016), who stated that direct guidance is quite effective in learning. Similarly, research by Barana et al. (2017) found that direct training enhances students' understanding and confidence. The training materials provided to the participants were based on previous years' SNBT questions, and the team also modified some questions to broaden the students' understanding of basic mathematics problems. The training materials included academic mathematics skills, general reasoning, and quantitative knowledge. The participants were very enthusiastic during the training sessions. Additionally, they actively asked questions related to the material presented by the team in each class. The activities during the training are illustrated in Figure 3 below.

Figure 3: Training Activities

Figure 4: Activities during training in the classroom

At the end of the training, all participants were given a posttest. The posttest questions were similar to previous years' SNBT questions but with some modifications. The posttest was conducted to assess the participants' abilities and understanding after the training. According to Setiani et al. (2022), the purpose of a posttest is to measure the final capabilities of the students. Similarly, Reimers et al. (2020) stated that a posttest aims to gauge the extent of the participants' understanding of the material presented during the training. The results of the participants' pretests and posttests can be seen in Figure 4.

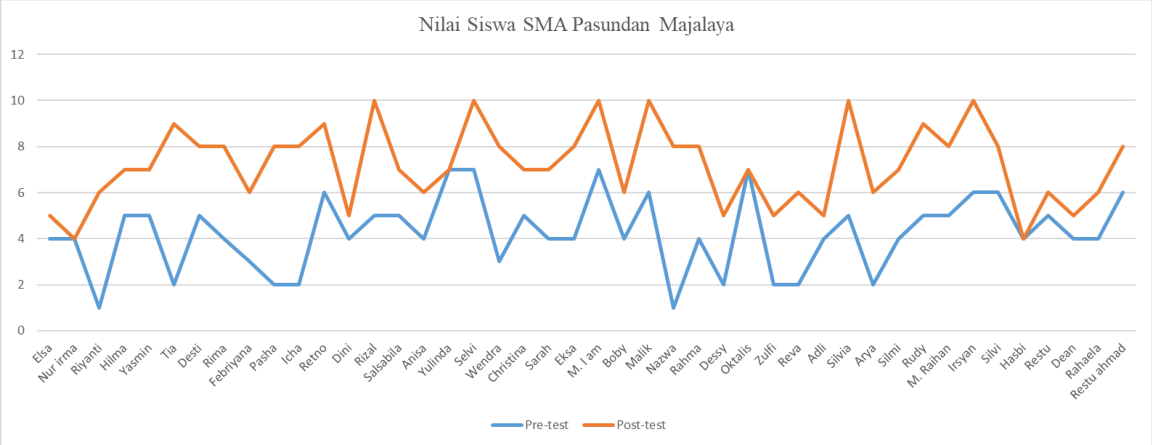

Figure 5: Evaluation Results of Students' Pretest and Posttest Scores

The evaluation results showed that the posttest scores were higher than the pretest scores for each student. This indicates that the students' understanding of solving basic mathematics problems improved. The basic mathematics problem-solving training was also conducted successfully according to the predetermined schedule.

4. Conclusion

The basic mathematics problem-solving training activity for preparing the 12th-grade students of SMA Pasundan Majalaya for the 2024 SNBT was successfully conducted. This is evident from the students' pretest and posttest scores. The increase obtained from the pretest and posttest results was 70%. Evaluation of the activities before and after the training showed that the posttest scores were higher than the pretest scores for each student. The participants' abilities and strategies in solving basic mathematics problems improved. Based on the pretest and posttest results, this training successfully addressed the partner's issue of students' inadequate preparation for the 2024 SNBT. Training on basic mathematics problems for 12th-grade students of SMA Pasundan Majalaya is crucial in preparing them for the 2024 SNBT. Therefore, for future service activities, it is advisable to extend the duration of the training to ensure participants' preparation is more optimal.

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