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QUANTITATIVE SKILLS TRAINING FOR SNBT PREPARATION AT SMA NEGERI 2 PAREPARE

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Abstract

The national selection process for new student admissions (SNPMB) has undergone changes. Three tests will be administered: scholastic tests, mathematical reasoning, and literacy in English and Indonesian. One of the scholastic segment test in the SNBT is a quantitative ability test that evaluates knowledge and proficiency in basic math. The primary goal of this training program is to enhance the preparation of SMAN 1 Parepare students for the UTBK-SNBT exam, particularly focusing on the quantitative ability aspect. The Community Service (PkM) team from Mathematics Study Program of Institut Teknologi Bacharuddin Jusuf Habibie conducts quantitative skills training. This program encompasses test simulations, and discussions, as well as tips and strategies for solving quantitative ability questions. The Results show that there was an average increase in the scores of the participants' Quantitative Skills test. Overall, the average percentage increase in the scores of the participants' Quantitative Skills test was 13% from the pre-test scores.

Introduction

The national selection process for new student admissions (SNPMB) has undergone changes compared to before. The UTBK-SNBT route (Computer-Based Written Exam - Test-Based National Selection) has been revised, focusing more on measuring reasoning and problem-solving abilities. In this context, three tests will be administered: scholastic tests, mathematical reasoning, and literacy in English and Indonesian. The Scholastic Potential Test assesses cognitive abilities deemed crucial for success in formal education, particularly higher education. One segment of this test in the SNBT is Quantitative Ability, evaluating knowledge and proficiency in basic mathematics (BPPP Kemdikbud, 2023).

A foundational grasp of mathematics is indispensable for understanding various principles, including mathematics itself. Proficiency in mathematics evolves through the utilization of its language (Sabasaje & Oco, 2023). Mathematical literacy denotes an individual's capability to reason mathematically, utilizing and interpreting mathematics to solve real-world problems across diverse contexts. It encompasses concepts, procedures, facts, and tools to describe, explain, and predict phenomena. It aids individuals in comprehending mathematics' role in the world and making informed judgments essential for engaged and reflective 21st-century citizens (Golla & Reyes, 2022).

Quantitative skill is a basic skill using mathematical thinking in a specific context, i.e. to analyze numerical data and solve mathematical problems (Tariq, 2013). It necessitates logical

thinking expressed through numbers and symbols. Quantitative skills are essential to professionals to provide a way to measure and compare variables (Indeed, 2022, 2023). The quantitative ability test assesses the depth of knowledge related to mathematical subjects Developing quantitative mathematical ability is akin to cultivating any habit; it requires consistent practice in various contexts. Mastery denotes comprehension or the capacity to apply knowledge effectively. This proficiency is gained through repeated study, enabling a genuine understanding of the subject matter. Mastery of mathematics involves fundamental processes such as addition, subtraction, multiplication, and division. These foundational processes significantly impact learning across various branches of mathematics (Indrawati, 2017). Studies have indicated that students' cognitive ability in mathematics is influenced by interest and learning awareness (Sitorus et al., 2022; Yulianti et al., 2022). The provision of guided practice can enhance students' mathematics skills, one such method being by offering training in the form of simulated tests (Farid et al., 2021; Jansen et al., 2013; Manalaysay, 2021; Prialita, 2019; Wongupparaj & Kadosh, 2022). In addition, simulation is one method used for practice and education, which is versatile applicable, and effective to enhance problem-solving skills (Lateef, 2010).

The service activities concentrate on enhancing quantitative abilities, integral to the Scholastic Potential Test, and essential preparation for the SNBT, particularly for students opting for the UTBK-SNBT route. Community Service (PkM) team from Mathematics Study Program of Institut Teknologi Bacharuddin Jusuf Habibie conducts quantitative skills training. This program encompasses test simulations and discussions, as well as tips and strategies for solving quantitative ability questions. The aim is to equip participants with a thorough understanding of concepts, procedures, facts, and mathematical tools, fostering efficient problem-solving abilities and mathematical thinking, especially for the UTBK-SNBT.

The target audience for service partners is 12th-grade students at SMA Negeri 2 Parepare. The primary goal of this training program is to enhance the preparation of SMAN 1 Parepare students for the UTBK-SNBT exam, particularly focusing on the quantitative ability aspect and providing simulated practice tests for the Scholastic Test in readiness for UTBK-SNBT.

Method
The training took place on October 30, 2023, from 08:30 to 12:00 in the Computer Lab of SMA Negri 2 Parepare, with a total of 30 participants from 12th-grade students. The implementation method of community service activities from the work program has been arranged as follows:
a. Preparation
   Community service preparation starts with identifying the partners' needs, followed by gathering information regarding the issues faced by SMA Negeri 2 Parepare partners, specifically related to the preparation for the quantitative ability test in UTBK-SNBT.
b. Planning
   This stage involves drafting the community service work program based on the analysis of the issues present at SMA Negeri 2 Parepare.
c. Training
   This phase is carried out through Mathematics Reasoning Training at SMA Negeri 2 Parepare. The training takes the form of providing simulated tests for the quantitative ability in UTBK-SNBT.
d. Evaluation
   This stage occurs after the Mathematics Reasoning Training by collecting questionnaire responses from student participants regarding their quantitative ability training at SMA Negeri 2 Parepare.

Results and Discussion

In quantitative skills training, pre-tests and post-tests are given to participants. The pre-test and post-test consist of 15 multiple-choice questions each with a time limit of 20 minutes for completion. Each correctly answered question is awarded 1 point, while incorrect or unanswered ones receive 0 points. The overview of the results of pre-test, post-test, and gain in participants' quantitative abilities is illustrated in the following Table 1.

Table 1. The Results of Pre-Test, Post-Test, and Gain in Participants' Quantitative Abilities

	Minimum	Maximum	Mean
Pre-test	2,0	9,0	5,533
Post-test	1,0	10,0	5,933
Gain	-4,00	5,00	,4000
Gain Percentage	-80%	100%	13%

Based on Table 1, it can be observed that the average quantitative abilities of participants increased after the training, with an average gain of 0.4 points and average of gain percentage is about 13%. The following Graph 1 is depicting the gain in participants' quantitative abilities.
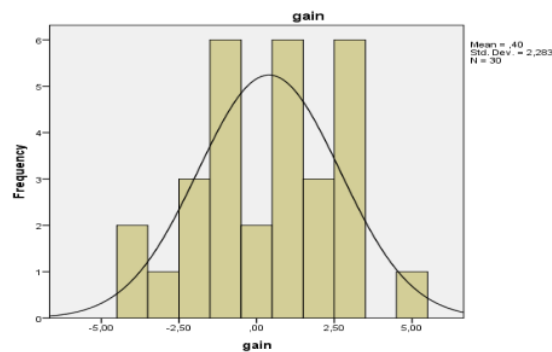
Graph 1. Gain of Quantitative Abilities

Graph 1 shows that the outcome of this training activity revealed an improvement in the quantitative abilities of 15 individual participants. Two remained static while 13 experienced a decrease. Overall, there was approximately 50% of participants got improvement. Participants who showed an increase in their quantitative abilities are considered individuals who grasped the material provided by the speaker effectively. On the other hand, those who experienced a decline or remained static possibly faced hindrances during their dedication due to suboptimal internet connectivity in the computer lab, leading them to work using their respective smartphones.

The participants' satisfaction responses were also measured through a questionnaire. The survey results indicate that 59.4% agree that there was an improvement in their ability to tackle quantitative knowledge tests. 62.5% agree that the guidance provided by the speaker was easy to understand. Another 62.5% agree that the content and training methods were satisfactory. 53.1% of students agree that such training activities should be continued, and overall, 53.1% are highly satisfied with the conducted training activities.

Conclusion

The Mathematics Team at Institut Teknologi Bacharuddin Jusuf Habibie conducted a Community Service activity by providing Quantitative Skills Training towards the success of SNBT at SMA Negeri 2 Parepare on October 30, 2023, with a total of 30 student participants. Based on the results of the pre-test and post-test administered, there was an average increase in the scores of the participants' Quantitative Skills test. Overall, the average percentage increase in the scores of the participants' Quantitative Skills test was 13% from the pre-test scores. It can be concluded that the quantitative skills training provided had a positive impact on enhancing the knowledge and skills of the students, particularly in solving scholastic problems related to the Quantitative Skills test for the upcoming SNBT. Based on survey, 53.1% of participants are highly satisfied with the conducted training activities and agree that such training activities should be continued.

Recommendation

We recommend teachers to provide guided practice and reinforcement to students regarding fundamental mathematical calculations such as algebra. Due to quantitative skills are a fundamental skill that can only be acquired through consistent practice.

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