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Analysis of UTBK Tryout Performance: Insights into Student Readiness Across Mathematical and Language Competencies

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Abstract The UTBK (Computer Based Written Exam) serves as a pivotal examination for Indonesian students seeking entry to state universities. This study analyzes tryout performance conducted by Laras Bimbel to evaluate participants' readiness for UTBK 2024. Employing a quantitative methodology, data were collected through offline tryouts integrated with digital platforms. Participants' scores, time management, and error patterns were examined to assess the distribution of competencies across sub-materials, particularly mathematical reasoning and literacy. Results reveal significant variations in performance, highlighting the need for tailored preparation strategies. This research underscores the importance of innovative educational interventions to address areas of difficulty, thereby enhancing students' overall exam preparedness.

Keywords: UTBK, Tryout performance, Computer based written exam, Mathematical and language competencies, Student readiness

INTRODUCTION

Higher education in Indonesia represents a critical pathway for students aiming to enhance their knowledge and career prospects. Admission to state universities is governed by rigorous selection processes, including the National Selection Based on Test (SNBT), which relies on the UTBK as its primary assessment tool (Aripin et al., 2024). The UTBK evaluates cognitive, academic, and basic skills competencies necessary for higher education success. However, achieving competitive scores requires not only subject mastery but also strategic preparation, especially given the constrained time limits of the exam (Sriyati, 2022).

To aid students in preparing for the UTBK, bimbingan belajar (bimbel) institutions, such as Laras Bimbel, conduct tryouts that simulate the exam environment. These tryouts serve as diagnostic tools, allowing students to identify strengths and weaknesses across test sections. They also provide insights into the efficacy of learning strategies and psychological readiness (Simarmata & Ahzan, 2021). Despite these efforts, many students struggle with mathematical reasoning and literacy components, reflecting gaps in school curricula and exam-specific preparation (Karina Aulia Putri et al., 2023).

The UTBK exam structure encompasses multiple components, including Scholastic Potential Test (TPS) and Academic Ability Test (TKA), which are tailored to assess both science and social sciences domains. These tests evaluate general reasoning, quantitative knowledge, and literacy skills, among other competencies. For students, success in these components is critical for entry into competitive programs. However, disparities in preparation often lead to uneven performance across subjects (Sutarjo, 2022).

One notable challenge is the time-bound nature of the UTBK. Participants must answer complex questions within tight time constraints, necessitating efficient time management and problem-solving skills. Many students experience heightened stress, which can negatively impact performance. Additionally, there is a pronounced need for personalized preparation strategies that address individual weaknesses while leveraging strengths (Listya et al., 2023).

This study aims to analyze the outcomes of tryouts conducted by Laras Bimbel, focusing on performance patterns in various sub-materials. By identifying areas of strength and difficulty, the research seeks to inform better preparation strategies and contribute to improved educational practices for UTBK success. Moreover, the study provides valuable insights into the role of structured guidance in enhancing students' readiness for high-stakes examinations.

METHOD

The study adopted a quantitative research design aligned with the positivist paradigm (Sugiyono, 2018). This approach enabled a detailed analysis of numerical data derived from participants' tryout results. Data collection involved non-probability sampling using a convenience sampling technique. The sample

consisted of 100 participants selected based on demographic diversity, age, and prior UTBK experience.

Data Collection

Data were gathered through offline tryouts administered via a digital platform. Participants' performance was recorded across seven sub-materials: general reasoning, general knowledge, Indonesian literacy, English literacy, mathematical reasoning, quantitative knowledge, and reading and writing comprehension. Additionally, a structured questionnaire was distributed via the G-form platform to capture participants' perceptions of question difficulty, time management, and their views on mathematical reasoning components. The questionnaire included both closed-ended and open-ended questions, providing a comprehensive dataset for analysis.

Data Analysis

Scores were statistically analyzed using descriptive and inferential methods to evaluate performance trends and identify correlations between frequency of practice and competency levels. Advanced item analysis techniques, such as the BILOG-MG for Windows application, were employed to categorize question difficulty levels and align them with the 1-PL, 2-PL, and 3-PL models. This ensured robust insights into participants' strengths and areas for improvement.

FINDINGS AND DISCUSSION

The results reveal significant variations in participants' performance across the seven assessed competencies. Table 1 summarizes the average scores:

Table 1. The average score of pparticipants' performance across the seven assessed competencies.

Competency	Average Score
General Reasoning	405.9
General Knowledge	312.0
Indonesian Literacy	296.9
English Literacy	279.7
Mathematical Reasoning	285.8
Quantitative Knowledge	250.5
Reading/Writing Comp.	239.9
Average	**295.81**

Performance Trends

General reasoning exhibited the highest average score (405.9), suggesting that participants possess strong analytical and logical skills. Conversely, reading and writing comprehension scored the lowest (239.9), indicating significant challenges in literacy-related tasks. These disparities underline the need for targeted interventions in weaker areas, particularly literacy and quantitative reasoning.

Participants' relatively strong performance in general reasoning and general knowledge indicates a foundational understanding of core concepts. However, the lower scores in mathematical reasoning and quantitative knowledge suggest a lack of depth in numeracy skills. This discrepancy may result from traditional teaching methods that prioritize rote memorization over critical thinking and problem-solving (Simarmata & Ahzan, 2021).

Question Difficulty Analysis

The analysis of question difficulty levels revealed distinct patterns. The 1-PL and 2-PL models demonstrated 100% accuracy in categorizing participants' thinking abilities into high, medium, and low categories. Approximately 25% of UTBK questions and 20% of SBMPTN questions were classified as moderately difficult, consistent across the 1-PL and 2-PL models. TBS items, particularly in logical and spatial reasoning, showed lower difficulty percentages, with 16% and 12%, respectively.

These findings highlight the importance of tailored preparation programs that address specific question types. For example, interactive tools and practice sessions focusing on spatial reasoning and logical thinking could improve performance in these areas. Additionally, strategies that emphasize conceptual understanding in mathematics can bridge the gaps in students' quantitative skills (Karina Aulia Putri et al., 2023).

Implications for Preparation

Participants' struggles in mathematical reasoning stem from inadequate foundational knowledge and ineffective study strategies. Additionally, test anxiety was identified as a significant barrier to optimal performance. These findings emphasize the importance of enhancing metacognitive skills and providing interactive learning resources to support students' preparation (Karina Aulia Putri et al., 2023).

To address these challenges, educational institutions must prioritize comprehensive training programs that integrate cognitive, metacognitive, and psychological components. Such initiatives can bridge gaps in school-based learning and better equip students for the complexities of the UTBK exam.

From a policy perspective, schools and bimbel institutions should collaborate to align preparatory activities with UTBK requirements. Incorporating frequent

diagnostic assessments and personalized feedback mechanisms can empower students to refine their learning strategies effectively. Furthermore, increasing access to online resources and affordable preparatory programs can democratize opportunities for underprivileged students, ensuring equity in education.

CONCLUSION

The findings of this study highlight critical disparities in students' competencies across various UTBK sub-materials. While general reasoning emerges as a strength, significant weaknesses in literacy and mathematical reasoning underscore the need for targeted educational interventions. Enhanced training programs, coupled with innovative teaching strategies, are essential to improving students' readiness and performance in high-stakes exams like the UTBK.

We recommend a strategic approach to exam preparation that involves collaboration between schools and bimbel institutions, leveraging targeted programs and modern learning tools to address student needs effectively. Schools and bimbel institutions should collaborate to design targeted preparation programs that address specific weaknesses identified in tryouts. The integration of digital learning tools and interactive resources can enhance students' engagement and understanding of complex topics. Efforts to reduce test anxiety through psychological support and time management workshops are critical for optimizing student performance.

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