



Strategic Evaluation of Computer-Based National Assessment Implementation Using SWOT Analysis: A Case Study

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ABSTRACT

This study aims to evaluate the implementation of the Computer-Based National Assessment (CBNA) at Muhammadiyah Mlati Senior High School using a descriptive qualitative approach through SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis. This approach was chosen because it provides a comprehensive overview of the school's internal and external conditions in implementing the CBNA. Research data were collected through interviews, observations, and documentation involving the principal, vice principal for curriculum, teachers, and administrative staff to obtain information regarding the school's strengths, weaknesses, opportunities, and threats. The analysis focused on three main aspects: input, process, and output. The results of the Internal Factor Analysis Summary (IFAS) and External Factor Analysis Summary (EFAS) show that Muhammadiyah Mlati Senior High School is positioned in the SO (Strengths–Opportunities) quadrant across all aspects, indicating that strengths and opportunities are more dominant than weaknesses and threats. The input aspect reflects the availability of adequate facilities, human resources, and financial support; the process aspect highlights the teachers' high qualifications and commitment to instructional innovation; while the output aspect demonstrates active alumni involvement and improvement in students' academic achievement. Based on these findings, it is recommended that an aggressive strategy be applied by utilizing internal strengths to seize external opportunities. The SWOT analysis proves to provide a strategic foundation for enhancing the quality of CBNA implementation and overall educational performance at Muhammadiyah Mlati Senior High School.

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ABSTRAK

Penelitian ini bertujuan untuk mengevaluasi pelaksanaan Asesmen Nasional Berbasis Komputer (ANBK) di SMA Muhammadiyah Mlati dengan menggunakan pendekatan deskriptif kualitatif melalui analisis SWOT (Strengths, Weaknesses, Opportunities, Threats). Pendekatan ini dipilih karena mampu memberikan gambaran menyeluruh

**Kata Kunci:**

Asesmen, ANBK, Evaluasi, SWOT

mengenai kondisi internal dan eksternal sekolah dalam pelaksanaan ANBK. Data penelitian dikumpulkan melalui wawancara, observasi, dan dokumentasi yang melibatkan kepala sekolah, wakil kepala sekolah bidang kurikulum, guru, serta tenaga kependidikan untuk memperoleh informasi terkait kekuatan, kelemahan, peluang, dan ancaman yang dihadapi sekolah. Analisis difokuskan pada tiga aspek utama, yaitu input, proses, dan output. Hasil *Internal Factor Analysis Summary* (IFAS) dan *External Factor Analysis Summary* (EFAS) menunjukkan bahwa SMA Muhammadiyah Mlati berada pada kuadran SO (*Strengths–Opportunities*) di seluruh aspek, menandakan bahwa kekuatan dan peluang lebih dominan dibandingkan kelemahan dan ancaman. Aspek input mencerminkan ketersediaan fasilitas, sumber daya manusia, dan dukungan pendanaan yang memadai; aspek proses menyoroti kualifikasi guru yang tinggi serta komitmen dalam inovasi pembelajaran; sedangkan aspek output menunjukkan keterlibatan aktif alumni dan peningkatan capaian akademik siswa. Berdasarkan hasil tersebut, disarankan penerapan strategi agresif dengan memanfaatkan kekuatan internal untuk meraih peluang eksternal. Analisis SWOT terbukti memberikan dasar strategis dalam meningkatkan mutu pelaksanaan ANBK dan kualitas pendidikan di SMA Muhammadiyah Mlati.

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INTRODUCTION

Computer-Based National Assessment is a recent initiative from the Indonesian Ministry of Education and Culture aimed at improving the quality of education across various educational levels, including Senior High Schools. This program was introduced to replace the previously used National Examination, which mainly focused on content mastery. In contrast, Computer-Based National Assessment emphasizes assessing literacy, numeracy, and student character through comprehensive surveys that measure higher-order thinking skills (Parilah et al., 2024). According to Riawan et al. (2023), this program is expected to provide a deeper understanding of student abilities, learning attitudes, and key aspects of their education beyond rote memorization. Consequently, it aims to bring significant improvements in the learning process, instructional methods, and overall educational outcomes in Indonesian schools by promoting a more holistic and competency-based approach.

Muhammadiyah Mlati Senior High School, as a Muhammadiyah-affiliated educational institution, is actively involved in implementing the Computer-Based National Assessment. However, like many other schools across Indonesia, it faces several challenges in executing this program effectively. Key issues include the readiness of technological infrastructure, such as the availability of adequate computer units, stable internet access, and system reliability during assessments (Siswanto et al., 2025). Additionally, the ability of teachers and students to adapt to the new digital system, along with frequent changes in educational policies, further complicates implementation (Suryatama et al., 2024). These factors must be considered



carefully to ensure that the Computer-Based National Assessment at Muhammadiyah Mlati Senior High School achieves its intended objectives and runs smoothly without significant technical or administrative obstacles.

On the other hand, support from the school management, the Muhammadiyah organization, and the local government represents strong assets that can aid in the successful execution of the Computer-Based National Assessment at Muhammadiyah Mlati Senior High School. Institutional collaboration provides opportunities to enhance educational quality through the effective use of technology, teacher training, and updated evaluation systems (Apriwulan et al., 2025). Furthermore, the presence of committed educators and a supportive learning culture also serves as internal strengths. Nonetheless, several threats and weaknesses still need thorough analysis (Anggreni et al., 2025). Challenges such as gaps in technology access among students, limited school resources for maintenance and upgrading facilities, and curriculum adjustments that may not align with the school's readiness continue to pose significant issues that must be addressed strategically.

To gain a comprehensive understanding of how Muhammadiyah Mlati Senior High School is addressing these challenges and leveraging available opportunities, a Strengths, Weaknesses, Opportunities, and Threats (SWOT) evaluation is necessary. This analytical approach will provide in-depth insights into the school's internal and external conditions related to the Computer-Based National Assessment implementation (Rahmawati et al., 2022). Through SWOT analysis, the institution can identify its core strengths to maintain, weaknesses to improve, opportunities to pursue, and threats to mitigate. The results will allow school leaders to formulate more effective strategies for optimizing Computer-Based National Assessment implementation and improving educational quality in a structured and sustainable way (Kristiawan et al., 2025).

This research therefore aims to evaluate the SWOT analysis of Computer-Based National Assessment implementation at Muhammadiyah Mlati Senior High School. SWOT analysis evaluates two major dimensions: internal factors (strengths and weaknesses) and external factors (opportunities and threats). The SWOT framework is widely recognized as a practical and effective analytical tool for organizations to assess their current position and develop strategies for performance improvement toward expected goals (Heryuriani et al., 2025). By applying SWOT analysis, schools can systematically analyze their conditions and create strategic plans that align institutional strengths with opportunities while addressing limitations and external challenges more effectively.

SWOT analysis has proven to be a powerful tool in formulating appropriate strategies, enabling organizations to maximize their internal potential and external prospects while minimizing constraints and risks. For example, studies by Kasanah et al. (2025) and Nugroho et al. (2025) show that enhancing infrastructure facilities and providing simulation exercises for students can effectively improve readiness and confidence in taking the Computer-Based National Assessment. Similarly, research by Harahap et al. (2025) and Rambe (2025) illustrates how SWOT analysis assists schools in developing long-term strategies to improve educational quality by optimizing available strengths and opportunities while mitigating weaknesses and external threats. Therefore, using SWOT analysis in this context becomes essential for schools seeking to adapt to the evolving assessment landscape in Indonesia.

Internal and external factors significantly influence the management and improvement of educational quality in schools (Mitra et al., 2024). Internal factors include aspects such as leadership, teacher competence, school culture, and resource management, while external



factors encompass government policies, technological advancements, and socio-economic conditions of the community. The results of this SWOT evaluation are crucial in determining the most appropriate strategic steps to enhance the quality of Computer-Based National Assessment implementation. This assessment represents a new form of the National Examination, emphasizing not only academic mastery but also the development of analytical, literacy, and numeracy competencies that are vital for 21st-century learning.

According to interviews with the Vice Principal for Curriculum Affairs at Muhammadiyah Mlati Senior High School, the average Computer-Based National Assessment scores over the past three years have shown gradual improvement, indicating positive progress in adapting to this new system. However, these results still fall short of national expectations, reflecting the need for further evaluation and targeted interventions to strengthen the implementation process. Therefore, this research seeks to conduct a comprehensive SWOT evaluation of the Computer-Based National Assessment implementation at Muhammadiyah Mlati Senior High School. The findings are expected to identify key areas for improvement, provide actionable recommendations, and ultimately contribute to enhancing the overall quality of education, particularly in the effective adoption of the Computer-Based National Assessment in the coming years.

METHOD

The research method employed in this study is a descriptive qualitative approach using SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis, which aims to evaluate the implementation of the Computer-Based National Assessment at Muhammadiyah Mlati Senior High School from the aspects of input, process, and output. This approach was chosen because it provides a comprehensive understanding of the school's internal and external conditions in implementing the computer-based national assessment program. Data were collected through interviews, observations, and documentation involving the principal, vice principal for curriculum affairs, teachers, and administrative staff to obtain detailed information regarding the strengths, weaknesses, opportunities, and threats faced by the school. The data analysis process was conducted through the stages of data reduction, data presentation, and conclusion drawing by utilizing the SWOT matrix to determine the school's strategic position.

The results of the Internal Factor Analysis Summary (IFAS) and External Factor Analysis Summary (EFAS) were then plotted into the SWOT quadrant to identify the most appropriate strategy whether aggressive, diversification, defensive, or turn-around. This approach aligns with Sugiyono (2019), who asserts that SWOT analysis is an effective strategic tool for formulating organizational development strategies through a systematic mapping of internal and external conditions. Furthermore, Creswell (2014) emphasizes that descriptive qualitative research is used to deeply understand phenomena by describing actual conditions based on data obtained from the field. Therefore, this method is expected to produce a strategic analysis that can enhance the quality of Computer-Based National Assessment implementation at Muhammadiyah Mlati Senior High School.

RESULTS AND DISCUSSIONS

Aspects of Input (School Assets)

Based on the analysis of internal and external factors in the input aspect at SMA Muhammadiyah Mlati, the final score for internal factors (Strengths-Weaknesses) is 1.78. This



indicates that strengths are more dominant than weaknesses, suggesting that student performance in the Computer-Based National Assessment implementation at this school is relatively good, although there are still some deficiencies in students' mastery of Computer-Based National Assessment. The school's strengths, such as adequate facilities and operational funding support, can be leveraged to empower the principal, teachers, and staff through quality training. Meanwhile, the final score for external factors (Opportunities-Threats) is 1.7, which signifies that opportunities are more dominant than threats. This allows the school to capitalize on existing opportunities to mitigate emerging threats. The results from the IFAS and EFAS analyses place SMA Muhammadiyah Mlati at the point (1.78; 1.7), which falls in the SO (Strength-Opportunities) quadrant. This favorable situation suggests that the school has greater strengths and opportunities, recommending the implementation of an aggressive strategy that supports growth by utilizing internal strengths to seize external opportunities.

In SWOT analysis, internal and external factors are categorized into Strength, Weakness, Opportunity, and Threat. To make this analysis more systematic and understandable, a SWOT matrix can be used. This matrix helps organize strategic factors systematically, providing a clearer picture of how internal strengths and weaknesses can be aligned with external opportunities and threats faced by the educational institution (Alam et al., 2025; Syah et al., 2025). Using the SWOT matrix also results in four sets of potential alternative strategies that can be applied to achieve the organization's vision and mission.

Mai et al. (2024) research supports the use of SWOT analysis to enhance educational quality. Quality is a critical topic not only in the economic field but also within educational institutions. In education, quality serves as a benchmark for various stakeholders, including parents and both private and public entities. Education is deemed high-quality when there is a balance between input, process, and output (Pisriwati et al., 2024; Saleh et al., 2025). Furthermore, the teaching and learning process must be effective and meaningful, supported by adequate human resources, funding, and facilities. According to Chusniyah et al. (2023), the use of SWOT analysis can be employed to maximize existing strengths and opportunities while minimizing weaknesses and threats, thereby improving educational quality.

Process Aspect (Computer-Based National Assessment Implementation)

Based on the analysis of internal and external factors related to the process aspect at SMA Muhammadiyah Mlati, the final score for internal factors (Strengths-Weaknesses) is 1.30. This score indicates that strengths are more dominant than weaknesses. This situation allows the school to leverage its strengths, such as the high educational qualifications of its teachers and their strong commitment, to enhance the management of learning processes creatively and innovatively, thereby addressing existing weaknesses. On the other hand, the final score for external factors (Opportunities-Threats) is 2.14. This indicates that opportunities outweigh threats, providing the school with the chance to capitalize on available opportunities to mitigate potential threats. As a result, Muhammadiyah Mlati Senior High School falls into the SO (Strengths-Opportunities) quadrant, suggesting that an aggressive strategy should be employed, using internal strengths to seize external opportunities.

Computer-Based National Assessment represents a national assessment that utilizes technology. The program offers several advantages, including reducing student anxiety related to answer sheet misreading and minimizing the potential for cheating due to the randomization of exam questions by the server (Astiwi et al., 2024; Hanama & Siswanto, 2025). Consequently, the results of the assessment more accurately reflect individual student abilities without



interference from the school or other students. This is consistent with the research by Rahmawati et al. (2022) and Tarso et al. (2025), which indicates that the primary focus of the school's strategy is to achieve its vision and mission of becoming an outstanding, Islamic, and high-quality educational institution by optimizing both academic and non-academic activities. The flagship programs and collaboration among the principal, teachers, and administrative staff contribute to the improvement of service quality and the future advancement of the school.

Output Aspect (SWOT Evaluation)

Based on the analysis of internal and external factors regarding the output aspect at Muhammadiyah Mlati Mlati Senior High School, the final score for internal factors (Strengths-Weaknesses) is 1.23. This indicates that strengths are more dominant than weaknesses, allowing the school to leverage its existing strengths, such as the presence of an alumni organization, to address weaknesses in tracking output results. Meanwhile, the final score for external factors (Opportunities-Threats) is 2.12, suggesting that opportunities outweigh threats. This enables the school to utilize available opportunities to mitigate existing weaknesses. Consequently, Muhammadiyah Mlati Senior High School is positioned in the SO (Strengths-Opportunities) quadrant, which implies that an aggressive strategy should be implemented-using internal strengths to capitalize on external opportunities.

This result is consistent with the studies by Berlianto & Pembangunan (2023) and Lembong et al. (2023), which examine the readiness for the implementation of the Computer-Based National Assessment. These studies emphasize the importance of preparing all necessary aspects for the success of Computer-Based National Assessment, including the provision and arrangement of adequate laboratory facilities and the strengthening of numeracy literacy instruction. This is crucial because numeracy literacy is a key component that students will encounter during the Computer-Based National Assessment, making readiness in these areas essential for achieving optimal results.

CONCLUSION

The SWOT analysis indicates that the main strengths at Muhammadiyah Mlati Mlati Senior High School include students' fundamental abilities, high interest and motivation to learn, and the teachers' qualifications matching their fields. These factors contribute to satisfactory results in the Computer-Based National Assessment. However, a weakness identified is that students' understanding of Computer-Based National Assessment questions is still not optimal. The available opportunity is the full support from the local government for the implementation of Computer-Based National Assessment in Sleman Regency. On the other hand, the primary threat is the frequent changes in the curriculum set by the government.

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