

Utilizing CBT Based E-Learning to Enhance the Quality of Education at MTs N 2 Purbalingga

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Abstract

This study aims to analyze the use of Computer Based Test (CBT) based E-Learning in improving the quality of education at MTs Negeri 2 Purbalingga. The use of CBT-based E-Learning was identified as having four main objectives, namely increasing the computerization of educators and education staff, increasing the selection of new students, providing wider access to students, and reducing the administrative burden for teachers. This research uses a case study approach with qualitative methods. The research subjects included the head of Madrasah MTs Negeri 2 Purbalingga, the Deputy Head of Madrasah for Facilities and Infrastructure, and educational staff. Data collection techniques used are interviews, observation, and documentation. The analysis technique applied is data triangulation. The research results show several essential things. First, the use of CBT-based E-Learning objectively improves the process of selecting new students. The system used in CBT provides fairness and objectivity in the selection process. Second, CBT-based E-Learning has also proven effective in increasing student access to tests. Learners can easily access tests through the provided E-Learning platform. Third, the use of CBT-based E-Learning reduces the administrative burden for teachers. Teachers no longer have difficulties in compiling administrative files such as questions and answers, and there is no need to manually evaluate participants' responses.

Keywords: Computer Based Test, E-Learning, Quality Education.

Abstrak

Penelitian ini bertujuan untuk menganalisis pemanfaatan *E-Learning* berbasis *Computer Based Test* (CBT) dalam peningkatan mutu pendidikan di MTs Negeri 2 Purbalingga. Pemanfaatan *E-Learning* berbasis CBT diidentifikasi memiliki empat tujuan utama, yaitu meningkatkan komputerisasi pendidik dan tenaga kependidikan, meningkatkan seleksi peserta didik baru, memberikan akses yang lebih luas kepada peserta didik, dan mengurangi beban administrasi bagi guru. Subjek penelitian meliputi kepala Madrasah MTs Negeri 2 Purbalingga, Wakil Kepala Madrasah Bidang Sarana dan Prasarana, dan tenaga kependidikan. Teknik pengumpulan data yang digunakan adalah wawancara, observasi, dan dokumentasi. Teknik analisis yang diterapkan adalah triangulasi data. Hasil penelitian menunjukkan beberapa hal penting. Pertama, pemanfaatan *E-Learning* berbasis CBT secara objektif meningkatkan proses seleksi peserta didik baru. Sistem yang digunakan dalam CBT memberikan kewajaran dan objektivitas dalam proses seleksi. Kedua, *E-Learning* berbasis CBT juga terbukti efektif dalam meningkatkan akses siswa terhadap ujian. Peserta didik dapat dengan mudah mengakses ujian melalui platform *E-Learning* yang disediakan. Ketiga, penggunaan *E-Learning* berbasis CBT mengurangi beban administratif bagi guru. Guru tidak lagi mengalami kesulitan dalam menyusun berkas administratif seperti soal dan jawaban, dan tidak perlu lagi mengevaluasi respons peserta secara manual.

Kata Kunci: Kata *Computer Based Test*, *E-Learning*, Mutu Pendidikan,

A. Introduction

Education is a crucial factor in a country's development. To achieve high quality education, the use of technology in the learning process has become a primary focus in various educational institutions. One increasingly popular innovation is the use of *E-Learning* Computer-Based Tests (CBT) as an effective tool in improving the quality of education.¹ MTs Negeri 2 Purbalingga has adopted this approach to provide a more efficient and interactive learning experience to its students.²

In this system, *E-Learning* used as a means to present learning materials online, while CBT is used as an efficient evaluation tool.³ The use of this technology allows

¹ Moh Rois Abin, "Strategic Management in Improving the Quality of Education," *Ta'allum: Journal of Islamic Education* 5, no. 1 (2017): hlm. 1, <https://doi.org/10.21274/taalum.2017.5.1.87-102>.

² Alek Alek et al., "Computer Based Testing in Senior High School on National Examination," *Indonesian Journal of Learning Education and Counseling* 2, no. 2 (2020): hlm. 12, 2, <https://doi.org/10.31960/ijolec.v2i2.340>.

³ Raimon Efendi et al., "Design and Implementation of Computer Based Test (CBT) in Vocational Education," *Journal of Physics: Conference Series* 1764, no. 1 (2021): hlm. 7, <https://doi.org/10.1088/1742-6596/1764/1/012068>.

students to learn more independently, get rapid feedback, and develop the digital skills needed in the modern era.⁴

One of the main benefits of utilizing *E-Learning* CBT-based is its ability to provide wider accessibility to students.⁵ With the platform *E-Learning*, students can access learning materials anytime and anywhere via electronic devices connected to the internet.⁶ This helps students learn independently, progress at their own pace, and review difficult material more easily. *E-Learning* CBT-based learning eliminates the limitations of time and space in traditional learning.⁷

Furthermore, utilizing CBT in the evaluation process also has significant advantages. In CBT, tests and exams are administered electronically via computer. The evaluation process can be automated by the system, resulting in accurate and objective evaluation results.⁸ Students receive immediate feedback on their successes and weaknesses in understanding the material. This helps teachers design more effective teaching strategies and allows students to develop the analytical and problem-solving skills needed in the digital age.⁹

Utilization *E-Learning* CBT-based assessments also reduce the administrative burden on teachers. With this system, teachers no longer need to spend valuable time manually correcting tests. An automated CBT system can correct tests and provide instant evaluation reports.¹⁰ This allows teachers to focus on more meaningful learning activities, such as providing individual guidance to students, designing innovative teaching strategies, and developing relevant learning materials.¹¹

⁴Siti Ermawati and Cahyo Hasanudin, "Utilization of the Telegram Mobile Application in Islamic Religious Education Learning," *Intelligence: Journal of Islamic Education* 9, no. 2 (2021): hlm. 3, 2, <https://doi.org/10.34001/intelegensia.v9i2.2845>.

⁵Rika Maria and Hadiyanto Hadiyanto, "The Urgency of Strategic Planning in Improving the Development and Quality of Education," *Educational: Journal of Educational Sciences* 3, no. 5 (2021): hlm. 5.

⁶Alfian Tri Kuntoro, "Islamic Education Quality Management," *Journal of Education* 7, no. 1 (2019): hlm. 5, <https://doi.org/10.24090/jk.v7i1.2928>.

⁷Siti Baro'ah, "The Independent Learning Policy as a Strategy to Improve the Quality of Education," *Tawadhu Journal* 4, no. 1 (2020): hlm. 2, 1.

⁸Sugiyono Sugiyono et al., "Development of a Computer Based Test (CBT) System at School Level," *Indonesian Journal of Business Intelligence (IJUBI)* 2, no. 1 (2019): hlm. 9, 1, <https://doi.org/10.21927/ijubi.v2i1.917>.

⁹Marcell Petrus Saptono and Herry Widjasena, "Design and Implementation of Computer-Based School Exam Applications or Computer Based Tests (CBT) at State Vocational School 1, Sorong Regency," *Let the Electro Shine* 5, no. 2 (2019): hlm. 7, <https://doi.org/10.32531/jelekn.v5i2.148>.

¹⁰Sugiyono et al., "Development of a Computer Based Test (CBT) System at School Level," p. 8.

¹¹Meixun Zheng and Daniel Bender, "Evaluating Outcomes of Computer-Based Classroom Testing: Student Acceptance and Impact on Learning and Exam Performance," *Medical Teacher* 41, no. 1 (2019): hlm. 3, <https://doi.org/10.1080/0142159X.2018.1441984>.

Efficiency is a crucial aspect of the new student selection process. In education, new student selection is carried out to select prospective students with potential and abilities that align with the educational standards set by the school. An efficient selection process can provide several significant benefits, such as reducing time, saving resources, and reducing the administrative burden.

Utilization *E-Learning* in the new student selection process is an effective solution to increase efficiency in the process. *E-Learning* is a learning approach that uses computer technology and the internet as the primary media. In the context of selecting new students, *E-Learning* based *Computer Based Test* (CBT) can be an efficient tool in managing and administering selection tests. This article will explain how efficiency can be improved through the use of *E-Learning* CBT-based in the new student selection process.¹²

Utilization *E-Learning* CBT-based selection can reduce the time required for the new student selection process. Traditional selection processes typically require a significant amount of time to collect and process new student registration forms. However, with *E-Learning* registration forms can be completed online, eliminating the need for students to physically come to school to pick up or return them. This saves time for students, parents, and the selection committee.¹³

Furthermore, the online selection process via CBT can also reduce the time required for the test. Students can take the test independently according to a predetermined schedule. There's no need to schedule a specific time and location for the test, which can be time-consuming and slow down the selection process. Students can access the platform *E-Learning* from anywhere and at any time, as long as they have an internet connection. This gives students flexibility in managing their study and test time, thereby reducing the time required for the selection process.¹⁴

Utilization *E-Learning* Using CBT in the new student selection process can also save resources. Traditional student selection typically requires a lot of paper, pencils, and other writing materials for testing. However, with CBT, all tests are conducted electronically. Students can answer test questions using computers or other electronic devices. This

¹²Nur Ariesanto Ramdhan and Dimas Wahyudi, "Web-Based New Student Admissions Information System (PPDB) at SMP Negeri 1 Wanasari Brebes," *Intech Scientific Journal: Information Technology Journal of UMUS* 1, no. 01 (2019): hlm. 4, 01, <https://doi.org/10.46772/intech.v1i01.38>.

¹³Muhamad Khoirul Umam, "Improving the Quality of Education Through Student Management," *Al-Hikmah Journal* 6, no. 2 (2019): hlm. 6, 2.

¹⁴Rizqi Muharom Zaef et al., "Android-Based New Student Admissions Information System Using Agile Methods," *2018 National Conference on Information Systems (KNSI)*, no. 0 (March 2018): hlm. 6, 0, <http://jurnal.atmaluhur.ac.id/index.php/knsi2018/article/view/363>.

reduces the use of paper and stationery, which in turn reduces resource consumption and the negative impact on the environment.¹⁵

In addition, the use of *E-Learning* can also reduce the use of physical resources such as classrooms and testing facilities. Traditional student selection requires adequate classroom space to administer the test. However, with CBT, students can take the test independently using their own devices, without the need for a dedicated classroom. This reduces the need for testing space and facilities, thus saving resources.¹⁶

In the new student selection process, administrative burdens are often a problem for all parties involved. The selection committee and teachers must collect, manage, and process student data. However, by utilizing *E-Learning* With a CBT-based system, most administrative tasks can be reduced. New student registration data can be collected electronically through online forms. This data can then be stored in a database that can be easily accessed and managed by the selection committee.¹⁷

In addition, the use of automated systems in *E-Learning* CBT-based assessments can also reduce the administrative burden of assessment and feedback to students. After students complete a test, an automated system can immediately provide instant feedback on their performance. Test results and scores can be automatically recorded in a database, reducing the administrative burden on teachers of manually checking and grading tests. This also minimizes the potential for grading errors and provides faster and more accurate feedback to students.¹⁸

In addition to efficiency in reducing time and administrative burden, the use of *E-Learning* CBT-based assessments can also improve accuracy and objectivity in the selection process for new students. In conventional tests, assessments can be influenced by human subjective factors, such as personal preferences or assessment bias. However, with CBT, assessments are performed automatically by a computer system, reducing the potential for subjective bias from human assessments. Consistently presented and standardized test

¹⁵ Alek et al., "Computer Based Testing in Senior High School on National Examination," hlm. 9.

¹⁶ Ammar Y. Alqahtani and Albraa A. Rajkhan, "E-Learning Critical Success Factors during the COVID-19 Pandemic: A Comprehensive Analysis of E-Learning Managerial Perspectives," *Education Sciences* 10, no. 9 (2020): hlm. 7, 9, <https://doi.org/10.3390/educsci10090216>.

¹⁷ Handoko Handoko et al., "The Evaluation Of Computer-Based National Examination System In Indonesia," *IJER - INDONESIAN JOURNAL OF EDUCATIONAL REVIEW* 6, no. 1 (2019): hlm. 9, 1, <https://journal.unj.ac.id/unj/index.php/ijer/article/view/12587>.

¹⁸ Maaik M. van Groen and Theo J. H. M. Eggen, "Educational Test Approaches: The Suitability of Computer-Based Test Types for Assessment and Evaluation in Formative and Summative Contexts," *Journal of Applied Testing Technology* 21, no. 1 (2019): hlm. 5, 1.

questions, and objectively scored answers by the computer system, help ensure more accurate and fair assessments.¹⁹

In addition, the utilization of *E-Learning* CBT-based learning also allows for more in-depth data analysis. Student test results can be comprehensively analyzed using data analytics technology. This analysis can provide more accurate and comprehensive information about the potential and needs of new students. For example, data can be used to identify patterns of student strengths and weaknesses across various knowledge and skills. With a better understanding of students, teachers can plan more effective learning approaches tailored to individual needs.²⁰

This study aims to explain the four main objectives of utilizing *E-Learning* CBT-based learning at MTs Negeri 2 Purbalingga, namely increasing the computerization of teaching staff and educational staff, improving the selection of new students, providing wider accessibility to students, and reducing the administrative burden on teachers.

Previous research that has been conducted in the field *E-Learning* and CBT have provided valuable insights into the potential and benefits of using technology in education. However, research specifically exploring the use of *E-Learning* CBT-based learning to improve the quality of education is still limited. Therefore, researchers are interested in filling this knowledge gap by conducting research that focuses on the use of *E-Learning* CBT-based in the context of improving the quality of education at MTS N 2 Purbalingga.

Previous research by Setiawan discussed the development of *E-Learning* as a learning medium, but did not specifically pay attention to the use of CBT. This research may have provided insight into the advantages and challenges of using *E-Learning* in learning, but has not provided a comprehensive understanding of the potential and benefits of utilizing CBT as part of *E-Learning* in improving the quality of education.²¹ Therefore, the planned research will expand on previous research by focusing on the utilization of CBT as an important component of *E-Learning*.

Furthermore, research by Saptono and Widjasena has implemented the use of CBT in specific contexts, but has not specifically addressed its impact on educational quality. This research may have provided insights into the implementation and effectiveness of CBT in the situations studied, but it has not explicitly explored its

¹⁹Ahmad Yani et al., "Design and Construction of a Web-Based Student Evaluation and Teacher Attendance Information System: A Case Study at Nusa Putra Vocational School, Tangerang City," *LIGHTNING* 11, no. 2 (2018): hlm. 5, 2, <https://doi.org/10.33322/petir.v11i2.344>.

²⁰Sitti Rabiah, "Higher Education Management in Improving the Quality of Education," *Sinar Management Journal* 6, no. 1 (2019): hlm. 7, 1, <https://doi.org/10.56338/jsm.v6i1.551>.

²¹Ariyono Setiawan et al., "Development of E-Learning as a Learning Media for Vocational Education," *Proceedings of the 1st SANTIKA National Seminar 2019*, November 25, 2019, hlm. 7.

relationship to improving educational quality.²²Therefore, the proposed research will contribute to understanding how the utilization of *E-Learning* CBT-based learning can effectively improve the quality of education at MTS N 2 Purbalingga.

Furthermore, Umam's research has discussed educational quality in general, but has not specifically explored the contribution of CBT to improving it. This research may have provided insight into the factors influencing educational quality, but it has not specifically addressed the role and potential of CBT as a tool for improving educational quality. Therefore, the proposed research will fill this gap by focusing on the utilization of CBT. *E-Learning* CBT-based to improve the quality of education at MTS N 2 Purbalingga.²³

By conducting research that combines the concepts and aspects discussed in previous research, the proposed research will make a significant contribution to the understanding of the potential *E-Learning* CBT-based learning to improve the quality of education. This research will discuss how CBT is utilized in *E-Learning* can reduce the administrative burden, increase the accuracy and objectivity of assessment, Previous research has been conducted in the field of *E-Learning* and CBT have provided valuable insights into the potential and benefits of using technology in education. However, research specifically exploring the use of *E-Learning* CBT-based learning to improve the quality of education is still limited. Therefore, researchers are interested in filling this knowledge gap by conducting research that focuses on the use of *E-Learning* CBT-based in the context of improving the quality of education at MTS N 2 Purbalingga.

By conducting research that combines the concepts and aspects discussed in previous research, the proposed research will make a significant contribution to the understanding of the potential *E-Learning* CBT-based learning to improve the quality of education. This research will discuss how CBT is utilized in *E-Learning* can reduce the administrative burden, improve the accuracy and objectivity of assessments, and increase efficiency in the selection of new students at MTS N 2 Purbalingga. In addition, this study will also analyze the impact of the use of *E-Learning* CBT-based learning towards developing student competencies and improving the quality of learning

B. Method

This research uses a case study with qualitative methods. The research subjects consisted of the principal of MTs Negeri 2 Purbalingga, the Deputy Principal for Facilities and Infrastructure, and educational staff. The research was conducted from February 10 to March 10, 2023. Data collection techniques used were interviews to ask questions to CBT implementers and policy makers, and observation to observe the implementation of

²²Saptono and Widjasena, "Design and Implementation of Computer Based Test (CBT) Applications at State Vocational School 1, Sorong Regency," p. 6.

²³Umam, "Improving the Quality of Education Through Student Management," p. 5.

activities. *E-Learning* by using CBT, and documentation is used to photograph and record activities *E-Learning*.²⁴ For data analysis, data triangulation techniques were used which involve combining and comparing data from various sources to ensure the accuracy and reliability of research findings.²⁵ By using this method, research can gain a deeper understanding of the utilization of *E-Learning* CBT-based learning at MTs Negeri 2 Purbalingga and its impact on computerization of teaching staff, selection of new students, student accessibility, and reduction of administrative burden for teachers.

C. Result

In an interview with the principal of Madrasah MTs Negeri 2 Purbalingga, he said that the use of *E-Learning* CBT-based learning in schools has several benefits, including:

Selecting new students better

Objectivity is an important aspect in the theory of Selecting New Students Better by utilizing *E-Learning* based *Computer Based Test* (CBT). There are several reasons why the use of *E-Learning* CBT-based can increase objectivity in the new student selection process.²⁶

E-Learning CBT-based uses an automated system to administer and score the test, reducing the potential for subjective bias from human scoring.²⁷ In traditional selection processes, the assessment of new students is often carried out by several people who may have different preferences or perspectives. By using an automated system in *E-Learning* With CBT-based assessments, the assessment process becomes more objective and consistent. The computer program will provide assessments based on predetermined criteria, without being influenced by subjective factors that could influence selection decisions.²⁸

Consistency in test presentation and scoring can be maintained through standardized computer programs, minimizing human error. In traditional selection processes, human error is possible in administering and scoring tests. For example,

²⁴Muhammad Firmansyah et al., "The Essence of the Differences between Qualitative and Quantitative Methods," *Elasticity - Journal of Development Economics* 3, no. 2 (2021): hlm. 5, 2, <https://doi.org/10.29303/e-jep.v3i2.46>.

²⁵Sugiyono, *Educational Research Methods Quantitative, Qualitative, and R & D Approaches* (Alfabeta, 2020), p. 8.

²⁶Dian Purwanti, "The Effectiveness of the Zoning System Policy for Students Prone to Continue Education," *Dynamics: Scientific Journal of Public Administration* 5, no. 4 (2019): hlm. 7, 4, <https://doi.org/10.25157/dinamika.v5i4.1737>.

²⁷Nurdian Ramadhani Ansar et al., "Implementation of Online-Based New Student Admissions Management at State Vocational School 6 Makassar," *JDMP (Journal of Educational Management Dynamics)* 4, no. 1 (2019): hlm. 9, 1, <https://doi.org/10.26740/jdmp.v4n1.p65-72>.

²⁸Widya Astuti Permana, "Student Recruitment Management in Improving Graduate Quality," *Isema Journal: Islamic Educational Management* 5, no. 1 (2020): hlm. 7, 1, <https://doi.org/10.15575/isema.v5i1.5989>.

differences in instructions, interpretation of answers, or inconsistent scoring are possible.²⁹ With *E-Learning* CBT-based tests are presented consistently through standardized computer programs. This minimizes human error and increases the objectivity of assessment.

By minimizing the factors of subjectivity and human error in the selection process, the utilization of *E-Learning* CBT-based testing can increase objectivity in assessing new students. This provides fairness and equal opportunity for every prospective student in the selection process. Greater objectivity also provides confidence to students, parents, and the general public that the selection process is conducted fairly and objectively.³⁰

Enhanced objectivity through the use of *E-Learning* The CBT-based approach to new student selection also positively impacts the reputation and credibility of educational institutions. By having an objective selection process, educational institutions can attract quality students and build trust among educational stakeholders.³¹

In an interview with the principal of Madrasah MTs Negeri 2 Purbalingga, he said that the use of *E-Learning* CBT-based learning has made a significant contribution to improving the selection of new students in schools. One of the steps taken is to implement the selection of prospective new students through *E-Learning*. Prospective students are asked to take an online test provided through the platform *E-Learning*. By using a definite and controlled system, the selection process can be conducted more objectively and transparently.

Apart from that, the head of the Madrasah also emphasized that in implementing the selection of new students using *E-Learning* With a CBT-based system, there's no possibility of cheating. In CBT, all tests and exams are administered electronically via computer, thus preventing practices such as unauthorized changes or manipulation of scores. With an automated and controlled system, the integrity of selection results can be better maintained.

Utilization *E-Learning* The CBT-based system in the selection of new students at MTs Negeri 2 Purbalingga has produced positive results. By using the system *E-Learning* Prospective new students are required to take an objective and controlled online

²⁹Mujianto Solichin and Imama Kutsi, "Implementation of Minister of Education and Culture Regulation Number 14 of 2018 concerning the Admission of New Students Based on the Zoning System at the Elementary Madrasah/Elementary School Level in Jombang District," *Dirasat: Journal of Islamic Management and Education* 5, no. 1 (2019): hlm. 3, 1, <https://doi.org/10.26594/dirasat.v5i1.1627>.

³⁰Sawaluddin Sawaluddin, "The Concept of Evaluation in Islamic Education Learning," *Al-Thariqah Journal of Islamic Religious Education* 3, no. 1 (2018): hlm. 3, 1, [https://doi.org/10.25299/althariqah.2018.vol3\(1\).1775](https://doi.org/10.25299/althariqah.2018.vol3(1).1775).

³¹I. Gusti Putu Darya, "Evaluation of the Implementation of the New Student Admissions System (PPDB) in Balikpapan City, Indonesia," *Journal of Educational Research* 20, no. 1 (2020): hlm. 3, 1, <https://doi.org/10.17509/jpp.v20i1.24551>.

test. This increases the accuracy and objectivity of evaluating prospective students' abilities.

Furthermore, the use of CBT in new student selection also prevents grade-fixing. In CBT, test and exam scores are generated automatically by the system, reducing the possibility of unethical practices such as grade manipulation. With a reliable and controlled system, the integrity of new student selection results can be maintained.

According to the researcher's analysis of the use of *E-Learning* The CBT-based approach to new student selection at MTs Negeri 2 Purbalingga can provide benefits in improving the objectivity, accuracy, and integrity of the selection process. With a better selection process, the school can select prospective students with strong academic and non-academic potential.³²

Effectiveness of students in accessing tests

Efficiency is an important aspect in the new student selection process. Utilization *E-Learning* in the selection process can provide a number of significant benefits in terms of reducing the time, resources, and administrative tasks involved. In the theory of Selecting Better New Students, efficiency can be achieved through the utilization of *E-Learning* based *Computer Based Test* (CBT). The new student selection process generally involves a number of administrative tasks that take up time and resources. Utilization *E-Learning* in the selection process can reduce the administrative burden and speed up the processing of selection data.³³

In traditional selection, registration forms and student files must be physically collected, verified, and processed manually by administrative staff. This process requires significant time and effort. However, by using *E-Learning* CBT-based, the registration process can be done online, thus reducing the time needed to collect and process new student files. Mia Rosmiati, "Web-Based New Student Admissions Information System," *Indonesian Journal on Software Engineering (IJSE)* 6, no. 2 (2020): 2, <https://doi.org/10.31294/ijse.v6i2.9003>.

In addition, with the adoption *E-Learning* With CBT-based selection, selection data can be processed automatically by a computer system. New student data, such as test scores and personal information, can be input into the system and processed quickly. This reduces the potential for human error in data processing and saves time required to process selection information.³⁴

³² Groen and Eggen, "Educational Test Approaches," p. 4.

³³ Ramdhan and Wahyudi, "Web-Based New Student Admissions Information System (PPDB) at SMP Negeri 1 Wanasari Brebes," p. 6.

³⁴ Zaef et al., "Android-Based New Student Admissions Information System Using Agile Methods," p. 7.

By reducing the time and resources required for administration and data processing, educational institutions can improve the efficiency of the selection process and expedite the announcement of selection results to new students. The use of CBT in the new student selection process also allows students to take the test flexibly and independently, without requiring physical presence at the selection site.³⁵

In traditional selection, students must arrive at the selection site at a designated time. This can be limiting for students in remote areas or those with limited mobility. However, by using *E-Learning* With CBT-based testing, students can take the test online from anywhere and at any time as long as they have an internet connection. This provides students with greater flexibility in choosing the time and location of their test, reducing any accessibility barriers they may face.³⁶

Furthermore, the use of CBT allows students to take the test independently. They can work at their own pace and learning style, without the pressure of external factors. This can help students focus better and have greater control over the selection process, thereby increasing their potential for success.

With flexibility and independence in taking the test, *E-Learning* CBT-based testing provides easier access and fairer opportunities for students from diverse backgrounds and geographic locations. It also reduces the cost and time required for students and parents to travel to selection locations.³⁷

One of the main efficiency benefits resulting from the utilization of *E-Learning* The CBT-based approach to the new student selection process is to reduce time-consuming administrative tasks. By reducing administrative tasks, the saved time can be allocated to more productive educational activities.

In traditional selection, school administrative staff typically spend significant time collecting and processing application forms, verifying student data, and developing selection schedules. In some cases, this process can take days or even weeks.

However, with the utilization of *E-Learning* With CBT-based systems, these administrative tasks can be automated. For example, registration forms can be accessed and completed online, reducing the time required for data collection and processing.

³⁵Ramdhan and Wahyudi, "Web-Based New Student Admissions Information System (PPDB) at SMP Negeri 1 Wanasari Brebes," p. 6.

³⁶Fajar Sidik and Mari Rahmawati, "Designing a Web-Based New Student Registration Information System at Bina Putra Vocational School, Jakarta," *Paradigm* 20, no. 1 (2018): hlm. 7, 1, <https://doi.org/10.31294/p.v20i1.3051>.

³⁷Zaef et al., "Android-Based New Student Admissions Information System Using Agile Methods," p. 7.

Computer systems can also assist in data verification and the development of selection schedules quickly and efficiently.³⁸

By reducing administrative tasks, the saved time can be used by school staff for more productive educational activities. For example, teachers can spend more time planning lessons, preparing innovative materials, and improving the quality of their teaching. School staff can also focus on developing a better curriculum, monitoring the progress of enrolled students, or organizing extracurricular activities that enrich the student learning experience.³⁹

By allocating saved time more effectively, educational institutions can improve the overall quality of education. Teachers and school staff have more time and energy to direct toward enhancing student learning experiences, expanding the curriculum, and providing more intensive attention to each individual. This positively impacts students' academic achievement and personal development.

In an interview with the principal of Madrasah MTs Negeri 2 Purbalingga, he said that the use of *E-Learning* CBT-based learning has made a significant contribution to providing greater accessibility to students. One step taken is to provide students with easy access to grades and learning outcomes. Through the platform *E-Learning* students can quickly view and download their grades and exam results. They can also view learning materials, assignments, and other resources anytime, anywhere.

Furthermore, the Madrasah principal emphasized the importance of flexible accessibility provided to students. In CBT implementation, students can access learning materials and assignments through various devices, such as laptops, tablets, or smartphones. This allows them to learn independently and access relevant educational information without the constraints of time and space.

Utilization *E-Learning* The CBT-based learning platform at MTs Negeri 2 Purbalingga has succeeded in providing wider accessibility to students. Through the platform *E-Learning* students can easily access and quickly view their grades and learning outcomes. This allows them to monitor their learning progress and reflect on their achievements.⁴⁰

Furthermore, the flexibility of accessibility provided to students is crucial. By having the ability to access learning materials and assignments through various devices,

³⁸Yani et al., "Design and Construction of a Web-Based Student Evaluation and Teacher Attendance Information System," p. 7.

³⁹Mia Rosmiati, "Web-Based New Student Admissions Information System," *Indonesian Journal on Software Engineering (IJSE)* 6, no. 2 (2020): hlm. 6, 2, <https://doi.org/10.31294/ijse.v6i2.9003>.

⁴⁰Vijay Vir Singh et al., "Probabilistic Assessment of Computer-Based Test (CBT) Network System Consists of Four Subsystems in Series Configuration Using Copula Linguistic Approach," *Journal of Reliability and Statistical Studies*, 2020, p. 9, <https://doi.org/10.13052/jrss0974-8024.132410>.

students can study according to their preferences and availability. They can utilize free time outside of school hours or access materials at home. This provides greater opportunities for students to learn independently and develop their skills.

Based on the researcher's analysis, there is utilization *E-Learning* With its CBT-based approach, MTs Negeri 2 Purbalingga has successfully increased the accessibility of learning for students. This automatically increases the transparency of educational quality improvements, making it more easily monitored by students and even parents.⁴¹

Reducing the administrative burden on teachers

In an effort to improve the quality of education at MTS N 2 Purbalingga, the use of *E-Learning* based *Computer Based Test* (CBT) can make a significant contribution. One important aspect that needs to be considered is reducing the administrative burden on teachers in utilizing *E-Learning* based.⁴² This theory acknowledges that reducing unnecessary administrative burdens on teachers can improve the effectiveness of teaching and learning through the use of CBT. This article will detail the effectiveness theory related to reducing administrative burdens on teachers in the use of CBT. *E-Learning* CBT-based at MTS N 2 Purbalingga.

First, the use of technology to manage administrative tasks. In this use *E-Learning* in CBT-based learning, technology can be used to efficiently manage teachers' administrative tasks. For example, using a learning management system (LMS) allows teachers to upload materials, create and manage test schedules, and automatically collect and store test results.⁴³ With this system, administrative tasks such as collecting and processing test data can be performed more quickly and accurately, reducing the administrative burden on teachers. This allows teachers to focus on more productive activities such as developing quality learning materials and providing effective feedback to students.

Second, efficiency in assessment and feedback. Utilization *E-Learning* CBT-based tests use automated systems to administer and score tests. This reduces the potential for subjective bias from human assessment and increases objectivity in assessment. Furthermore, CBT allows teachers to provide instant feedback to students after completing the test. CBT systems can provide real-time information about student performance, including their strengths and weaknesses in the various aspects of knowledge and skills being tested. With this fast and accurate feedback, teachers can

⁴¹Mualimul Huda, "Analysis of Teacher Performance Factors to Improve the Quality of Madrasah Education," *Islamic Management: Journal of Islamic Education Management* 5, no. 01 (2022): hlm. 6, 01, <https://doi.org/10.30868/im.v5i01.2083>.

⁴²Zaef et al., "Android-Based New Student Admissions Information System Using Agile Methods," p. 7.

⁴³Ramdhan and Wahyudi, "Web-Based New Student Admissions Information System (PPDB) at SMP Negeri 1 Wanasari Brebes," p. 5.

provide appropriate guidance and direction to students, helping them understand and correct their mistakes more effectively.⁴⁴

Third, consistent test presentation and scoring. Using CBT, test presentation and scoring can be maintained consistently through a standardized computer program. Each student is tested with the same questions and scored objectively based on predetermined criteria. This reduces the risk of human error in the test presentation and scoring process. With consistent scoring, student test results are reliable and can be used to make more accurate selection decisions. Teachers can also use this test data to more comprehensively understand students' learning needs and adapt teaching strategies accordingly.⁴⁵

Fourth, improving data analysis for more accurate information. In utilizing *E-Learning* With CBT-based learning, student test data can be comprehensively analyzed using data analysis technology. This analysis can provide more accurate and comprehensive information about the potential and needs of new students. For example, data can be used to identify patterns of student strengths and weaknesses across various aspects of knowledge and skills. With a better understanding of students, teachers can make more accurate decisions about choosing teaching methods, organizing study groups, or providing individual guidance. Furthermore, data analysis can also aid in the development of a better curriculum, focusing on areas of knowledge or skills that need improvement. By using this test data, teachers can take appropriate steps to improve the quality of teaching and learning at MTS N 2 Purbalingga.

In an interview with the principal of Madrasah MTs Negeri 2 Purbalingga, he said that the use of *E-Learning* CBT-based assessments have successfully reduced the administrative burden on teachers. One step taken is to replace the use of cards and printed documents in the exam process. Through the platform *E-Learning* Teachers can enter exam participant data electronically, including creating and managing exam participant cards. Teachers can also upload exam materials and questions online.

In addition, the head of the Madrasah also emphasized that by using *E-Learning* With CBT-based testing, teachers no longer need to print and distribute exam-related files to students. All exam materials and questions can be accessed digitally through the platform *E-Learning*. This not only reduces paper usage and excessive printing, but also saves time and effort required in the exam administration process.

⁴⁴ M. J. Perri, "Online Data Generation in Quantitative Analysis: Excel Spreadsheets and an Online HPLC Simulator Using a Jupyter Notebook on the Chem Compute Web Site," *Journal of Chemical Education* 97, no. 9 (2020): hlm. 7, <https://doi.org/10.1021/acs.jchemed.0c00565>.

⁴⁵Yani et al., "Design and Construction of a Web-Based Student Evaluation and Teacher Attendance Information System," p. 8.

Utilization *E-Learning* The CBT-based exam system at MTs Negeri 2 Purbalingga has successfully reduced the administrative burden on teachers. By replacing the use of cards and printed forms in the exam process, teachers no longer need to waste time and energy printing and distributing forms to students. All exam materials and questions can be accessed digitally through the platform. *E-Learning*, saving resources and reducing paper usage.

In addition, the use of *E-Learning* CBT-based testing also simplifies the exam administration process for teachers. Exam participant data can be entered electronically, making it more efficient to manage. Teachers can also easily upload and manage exam materials and questions through the platform. *E-Learning* This reduces the complexity of the administrative process and makes it easier for teachers to administer exams.⁴⁶

With the utilization of *E-Learning* Based on CBT, researchers analyzed that MTs Negeri 2 Purbalingga has succeeded in reducing the administrative burden on teachers, which allows teachers to focus more on learning without the burden of piling up administration, which results in the quality of education at MTsN 2 Purbalingga becoming even better.⁴⁷

D. Conclusion

Based on the results mentioned, it can be concluded that the utilization of E-Learning based Computer Based Test (CBT) in improving the quality of education at MTs N 2 Purbalingga has a positive impact in several aspects. First, E-Learning CBT-based testing can help in better selecting new students. The CBT system can be used to objectively and efficiently test prospective students' abilities. By utilizing this technology, MTs N 2 Purbalingga can conduct fairer and more standardized assessments in the new student selection process. Furthermore, E-Learning CBT-based learning also provides wider accessibility to students. By using the platform E-Learning Students can access learning materials anytime and anywhere as long as they have an internet connection. This allows students to learn independently and flexibly, without being limited by time or location. This allows educational opportunities to be expanded to students who may have physical limitations or geographic distance. Lastly, utilization E-Learning CBT-based learning can also reduce the administrative burden on teachers. With a CBT system, teachers can automate the assessment and reporting process. This reduces repetitive administrative tasks and allows teachers to focus on more interactive and productive learning activities.

⁴⁶Imam Turmidzi, "Implementation of Educational Supervision to Improve the Quality of Education in Madrasas," *Tarbawi: Journal of Islamic Thought and Education* 4, no. 1 (2021): hlm. 9, 1, <https://doi.org/10.51476/tarbawi.v4i1.245>.

⁴⁷Zheng and Bender, "Evaluating Outcomes of Computer-Based Classroom Testing," hlm. 7.

This allows teachers to spend more time providing individualized guidance to students and developing more innovative learning methods.

Overall, the utilization of E-LearningThe CBT-based learning approach at MTs N 2 Purbalingga has had a positive impact on improving the quality of education. In addition to aiding in a better selection process for new students, this technology also provides greater accessibility to students and reduces the administrative burden on teachers. However, the researcher still has shortcomings in conducting this research. The researcher's shortcomings in this research are in the area of utilization. E-Learning without an analytical perspective. Therefore, further researchers are permitted to conduct research related to the analysis of utilization.E-Learningin CBT in order to improve the quality of educational institutions.

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