Vol 12, No 1, Juli 2026, Hal 1-21
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v12i1.28798

Evaluating the 2026 Computer-Based Academic Ability Test in Kediri Elementary Schools: Procedural Compliance and Infrastructure Readiness

Ali Muchasan[1]*, Desy Putri P[2], Inchinia Angger Rowin[3], Joko Irianto[4], Sanusi[5]
ali@iaih.ac.id, desy.iainkediri@gmail.com, inchiniaar@gmail.com, j.irianto22@gmail.com, sanusi.lantung@gmail.com,
Dewan Pendidikan Kabupaten Kediri[12345]

ARTICLE INFO

Article history:
Received May 8th 2026
Accepted June 7th, 2026
Available online July 30th 2026

Kata Kunci:
Infrastruktur TIK; kepatuhan prosedural; pemantauan dan evaluasi; Tes Kemampuan Akademik Sekolah Dasar (TKA)
Keywords:
ICT infrastructure; procedural compliance; monitoring and evaluation; Elementary School Academic Ability Test (TKA)

Published by :
Universitas Nusantara PGRI Kediri
Email: jurnal_jpdn@unpkediri.ac.id

Abstract :

The transition of primary education assessment toward Computer-Based Testing (CBT) requires not only student readiness but also procedural compliance, adequate devices, reliable internet connectivity and electricity, and sufficient technical support at the school level. Differences in capacity across educational institutions may result in unequal implementation, particularly among schools located in peripheral areas. Against this background, the research problem concerns the extent of procedural compliance and technical infrastructure readiness among elementary schools in implementing the CBT-based Academic Ability Test (*Tes Kemampuan Akademik*—TKA) in Kediri Regency in 2026. This study aimed to evaluate the implementation of the elementary-level TKA in relation to these two aspects. A descriptive quantitative approach was employed using a structured survey based on a monitoring instrument developed by the Kediri Regency Education Council. The study involved 22 sampled schools across 10 districts, comprising 18 public elementary schools and four private/Islamic elementary schools, with 853 registered participants. The instrument consisted of a 29-item dichotomous checklist and a five-point Likert scale covering the preparation and implementation dimensions. The findings revealed a participant attendance rate of 99.88%; all schools independently administered online CBT; checklist compliance reached 95.5%; and the mean scores for preparation, implementation, and overall performance were 4.503, 4.257, and 4.380, respectively, all of which were classified as excellent. The primary constraint was the absence of an uninterruptible power supply (UPS) or generator in four schools (18%). The study concludes that the initial implementation of the elementary-level TKA was highly successful; however, further improvements are needed in electrical infrastructure, support for schools in peripheral areas, and the institutionalization of annual monitoring.

Abstrak :

Transisi penilaian pendidikan dasar menuju Tes Berbasis Komputer (CBT) tidak hanya membutuhkan kesiapan siswa tetapi juga kepatuhan prosedural, perangkat yang memadai, konektivitas internet dan listrik yang andal, serta dukungan teknis yang cukup di tingkat sekolah. Perbedaan kapasitas antar lembaga pendidikan dapat mengakibatkan implementasi yang tidak merata, terutama di sekolah-sekolah yang terletak di daerah pinggiran. Dengan latar belakang ini, permasalahan penelitian ini berkaitan dengan sejauh mana kepatuhan prosedural dan kesiapan infrastruktur teknis di sekolah-sekolah dasar dalam mengimplementasikan Tes

*Corresponding Autor : Ali Muchasan

Vol 12, No 1, Juli 2026, Hal 1-21
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v12i1.28798

Kemampuan Akademik (TKA) berbasis CBT di Kabupaten Kediri pada tahun 2026. Studi ini bertujuan untuk mengevaluasi implementasi TKA tingkat sekolah dasar dalam kaitannya dengan dua aspek tersebut. Pendekatan kuantitatif deskriptif digunakan dengan menggunakan survei terstruktur berdasarkan instrumen pemantauan yang dikembangkan oleh Dewan Pendidikan Kabupaten Kediri. Studi ini melibatkan 22 sekolah sampel di 10 kecamatan, terdiri dari 18 sekolah dasar negeri dan empat sekolah dasar swasta/Islam, dengan 853 peserta terdaftar. Instrumen tersebut terdiri dari daftar periksa dikotomis 29 item dan skala Likert lima poin yang mencakup dimensi persiapan dan implementasi. Temuan menunjukkan tingkat kehadiran peserta sebesar 99,88%; semua sekolah secara mandiri melaksanakan CBT daring; kepatuhan terhadap daftar periksa mencapai 95,5%; dan skor rata-rata untuk persiapan, implementasi, dan kinerja keseluruhan masing-masing adalah 4,503, 4,257, dan 4,380, yang semuanya diklasifikasikan sebagai sangat baik. Kendala utama adalah tidak adanya catu daya cadangan (UPS) atau generator di empat sekolah (18%). Studi ini menyimpulkan bahwa implementasi awal TKA tingkat dasar sangat berhasil; namun, perbaikan lebih lanjut diperlukan dalam infrastruktur listrik, dukungan untuk sekolah-sekolah di daerah terpencil, dan pelembagaan pemantauan tahunan.

INTRODUCTION

The 2026 Academic Ability Test (*Tes Kemampuan Akademik* TKA) at the elementary school level represents one component of the transformation of primary education assessment policy in Indonesia. Following the discontinuation of the National Examination as a determinant of student graduation, the national assessment system has increasingly emphasized quality mapping, the diagnosis of learning achievement, and the provision of information to support educational policy improvement. Within this framework, the TKA is not intended to determine student graduation but rather to serve as an instrument for mapping academic abilities, the results of which may be used by educational institutions and local governments to formulate strategies for improving the quality of learning. This orientation is consistent with the modern assessment paradigm, which positions assessment as an integral component of a learning culture rather than merely as a mechanism for selection or final judgment of student achievement (Shepard, 2000; Black & Wiliam, 2009).

The implementation of the TKA at the elementary school level is strategically important because Grade 6 students are at a transitional stage before entering secondary education. At this stage, academic achievement data are needed to assess student readiness, evaluate the effectiveness of school-level learning, and identify disparities in educational quality across schools and regions. However, the implementation of the 2026 elementary school TKA also presents new challenges because the assessment is administered through a Computer-Based Testing (CBT) system. CBT requires a more complex level of readiness than paper-based assessment because successful implementation depends not only on students' academic preparedness but also on the availability and readiness of computers, internet connectivity, servers, electricity, testing applications, proctors, technicians, and school operational procedures.

The transition from paper-based to computer-based assessment reflects a global trend toward the modernization of educational evaluation systems. Digital technology enables assessments to be administered more efficiently and consistently, accelerates data processing, and potentially provides richer diagnostic information. Shute and Rahimi

*Corresponding Autor : Ali Muchasan

JPDN
Jurnal Pendidikan Dasar Nusantara
Vol 12, No 1, Juli 2026, Hal 1-21
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v12i1.28798

(2017) explained that computer-based assessment can establish stronger links between assessment and learning because the resulting data can be used to understand students' competency development in a more structured manner. Nevertheless, these benefits cannot be realized automatically when schools lack adequate infrastructure, human resources, and technical governance. Perry, Meissel, and Hill (2022) also emphasized that the transition from paper-based to computer-based assessment requires consideration of both its benefits and risks, particularly those related to test-mode effects, students' testing experiences, and institutional readiness.

At the elementary school level, this issue is particularly important because students' ability to use digital devices remains uneven. Horkay et al. (2006) demonstrated that students' experiences in computer-based assessments are influenced by their familiarity with digital devices, particularly among students with limited experience in using computers. Furthermore, a systematic review by Godaert et al. (2022) found that elementary school students demonstrate varying levels of digital competence and that the assessment of such competence continues to face challenges related to both the scope of the competencies measured and the quality of the instruments employed. Therefore, CBT implementation at the elementary school level should not be regarded merely as a change in the testing medium. Instead, it should be understood as a systemic transformation involving the readiness of students, teachers, schools, and the broader supporting environment.

A major issue in the implementation of the CBT-based elementary school TKA is the disparity in readiness among educational institutions. Schools in urban areas generally have better access to information and communication technology (ICT) devices, stable internet connections, reliable electricity, and technical support personnel. Conversely, schools in peripheral or rural areas frequently encounter limitations related to devices, connectivity, electricity supply, and technical assistance. Prasetyo and Hermawan (2022) emphasized that disparities in ICT infrastructure among Indonesian schools remain a significant issue in the implementation of computer-based assessment. This finding is consistent with Van de Werfhorst, Kessenich, and Geven (2022), who demonstrated that the digital readiness of students and schools may vary substantially. Consequently, the digital transformation of education may exacerbate inequality unless it is accompanied by affirmative policies. Li (2025) similarly identified significant differences between urban and rural elementary schools in the use of educational technology, particularly as a result of disparities in access, institutional support, and professional development.

Kediri Regency provides a relevant context for examining this issue because it is characterized by diverse geographical and educational conditions, including urban, semi-urban, peripheral, and rural districts. Such diversity affects the capacity of schools to provide the facilities and infrastructure required for CBT. Based on monitoring conducted by the Kediri Regency Education Council, the most stable levels of CBT readiness were demonstrated by SD NU Puncu, SDN Gadungan 4 Puncu, SDN Mojo,

*Corresponding Autor : Ali Muchasan

Vol 12, No 1, Juli 2026, Hal 1-21
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v12i1.28798

SDN Klanderan Plosoklaten, and SD NU Darussalam Semen, which obtained composite scores ranging from 4.82 to 4.88. Conversely, SDN Sambi 1 Ringinrejo, SDN Papar 1, SDN Bobang 1 Semen, SDN Krandang 1 Kras, and SDN Plemahan 2 require further strengthening of their readiness, as their composite scores ranged from 3.61 to 3.87. With regard to electrical resilience specifically, SDN Branggahan Ngadiluwih, SDN Sambi 1 Ringinrejo, SDN Grogol 3, and SDN Bobang 1 Semen had not yet been equipped with an uninterruptible power supply (UPS) or generator as a backup power source. These findings indicate that the readiness of devices, networks, technical personnel, and supporting facilities for CBT remains uneven across schools in Kediri Regency (Kediri Regency Education Council, 2026). Davey et al. (2011) emphasized that computer-based testing requires serious attention to technical conditions, security, system reliability, and continuity of implementation. Al-Amri (2008) similarly demonstrated that disruptions to physical infrastructure, including electricity and internet connectivity, can be major causes of CBT implementation failure.

Another issue requiring attention is schools' procedural compliance with TKA implementation requirements. In large-scale national assessments, procedural standardization is essential to ensure that the resulting data are reliable and can be compared fairly across educational institutions. Procedural compliance includes an understanding of the relevant policies, the preparation of student administration, communication with parents, the readiness of examination rooms, scheduling, the assignment of proctors and technicians, the implementation of simulations, and the management of technical disruptions on the day of the assessment. Inconsistent compliance with established procedures may compromise the validity of the assessment process. Monitoring and evaluation are therefore essential mechanisms for ensuring that TKA implementation is not only administratively successful but also consistent with the principles of accountability, fairness, and quality.

In this study, monitoring and evaluation are regarded as problem-solving strategies for obtaining an objective overview of the implementation of the CBT-based elementary school TKA in Kediri Regency. Stufflebeam and Coryn (2014) explained that program evaluation should address context, input, process, and product in order to provide comprehensive information for decision-making. Within this framework, the evaluation of the elementary school TKA should not be limited to the final outcomes of implementation. It should also examine initial readiness, implementation processes, procedural compliance, technical constraints, and variations in achievement among educational institutions. Sanjaya, Mardiyono, and Suprianto (2021) emphasized that monitoring and evaluation conducted using structured instruments can improve data objectivity and strengthen the credibility of local educational policy recommendations.

The Kediri Regency Education Council conducted monitoring and evaluation in 22 sampled schools across 10 districts to obtain empirical evidence regarding the readiness and implementation of the 2026 elementary school TKA. This monitoring and evaluation process is normatively grounded in the principle of community participation

*Corresponding Autor : Ali Muchasan

Vol 12, No 1, Juli 2026, Hal 1-21
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v12i1.28798

as stipulated in Law Number 20 of 2003 concerning the National Education System and Regulation of the Minister of Education and Culture Number 75 of 2016 concerning School Committees. Accordingly, the involvement of the Education Council serves not only as a form of external oversight but also as a manifestation of community participation in ensuring the quality of educational services. The resulting data are important because they can inform policies concerning infrastructure improvement, school development, and the strengthening of computer-based assessment governance at the local level.

Based on the preceding discussion, the research problem is formulated as follows: What are the levels of procedural compliance and technical infrastructure readiness among elementary schools in implementing the CBT-based TKA in Kediri Regency in 2026? This principal research question encompasses several subsidiary issues, including the extent to which schools understand and comply with TKA implementation procedures, the readiness of their devices and technical infrastructure, the quality of CBT implementation on the day of the assessment, and patterns of achievement and disparities among educational institutions. These issues are important because successful CBT implementation is determined not only by whether an assessment is administered but also by the quality of the process, equality of readiness, and schools' capacity to manage technical risks.

This study aims to evaluate the implementation of the CBT-based elementary school TKA in Kediri Regency in 2026 by examining procedural compliance and technical infrastructure readiness. Specifically, the study aims to: first, describe schools' compliance with the administrative and technical procedures governing TKA implementation; second, analyze the readiness of CBT infrastructure, including devices, internet connectivity, electricity, and backup power sources; third, assess the quality of TKA implementation on the day of the examination using measurable implementation indicators; and fourth, map achievement profiles and disparities among schools according to school status and district location. These objectives were formulated to ensure that the results are not merely descriptive but can also provide an operational basis for policy recommendations addressed to local government authorities and educational institutions.

The theoretical framework of this study is based on four principal concepts: educational assessment, computer-based testing, ICT infrastructure readiness, and program monitoring and evaluation. From the perspective of educational assessment, an effective assessment should generate information that can be used to improve learning, refine policy, and support greater equality in educational quality (Shepard, 2000; Black & Wiliam, 2009). From the CBT perspective, computer use in assessment offers opportunities for efficiency and standardization but requires the management of technical risks, test-mode validity, and students' digital competence (Davey et al., 2011; Perry, Meissel, & Hill, 2022; Shute & Rahimi, 2017). From the perspective of ICT infrastructure, school readiness should not be assessed solely on the basis of device availability but should also include system stability, network availability, electricity,

*Corresponding Autor : Ali Muchasan

Vol 12, No 1, Juli 2026, Hal 1-21
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v12i1.28798

backup power sources, and the technical capacity of school personnel (Al-Amri, 2008; Prasetyo & Hermawan, 2022; Van de Werfhorst, Kessenich, & Geven, 2022). From the perspective of monitoring and evaluation, assessment implementation should be evaluated systematically in order to generate valid information for continuous improvement (Sanjaya, Mardiyono, & Suprianto, 2021; Stufflebeam & Coryn, 2014).

This study is expected to provide both theoretical and practical contributions. Theoretically, it enriches the literature on the implementation of computer-based assessment at the elementary school level, particularly in regional contexts characterized by varying levels of infrastructure capacity. Previous studies of CBT have largely focused on secondary and higher education, whereas experience at the elementary school level remains relatively underexplored. Practically, the study is expected to provide input for the Education Office, the Education Council, educational institutions, and other relevant stakeholders in formulating policies to strengthen CBT implementation. The resulting recommendations may be used to determine priorities for device procurement, the provision of backup electricity, support for schools in peripheral areas, the training of proctors and technicians, and the institutionalization of TKA monitoring and evaluation as an annual educational quality assessment agenda.

Accordingly, this study is important because the initial implementation of the CBT-based elementary school TKA represents not merely an administrative event but also an opportunity to assess the readiness of primary education for digital transformation in Kediri Regency. The success of TKA implementation must be critically examined using data on procedural compliance, infrastructure readiness, implementation quality, and disparities among schools. A systematic analysis of these aspects can provide a basis for more accurately targeted policies and help ensure that assessment modernization does not create new inequalities but instead serves as an instrument for strengthening the quality and equality of primary education.

METHOD

This study employed a descriptive quantitative approach using a structured survey. This approach was selected because the study sought to provide a systematic description of the implementation of the CBT-based Academic Ability Test at the elementary school level in Kediri Regency in 2026, particularly in relation to procedural compliance, technical infrastructure readiness, and implementation quality. A descriptive quantitative design is appropriate for presenting factual conditions through numerical data obtained using standardized instruments. The survey technique was employed because data were collected from multiple educational institutions within a specified period to obtain a general overview of program implementation (Story & Tait, 2019; Wang & Cheng, 2020).

The study population comprised elementary schools implementing the 2026 elementary school TKA in Kediri Regency. The sample consisted of 22 schools located across 10 districts, including 18 public elementary schools and four private/Islamic

*Corresponding Autor : Ali Muchasan

Vol 12, No 1, Juli 2026, Hal 1-21
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v12i1.28798

elementary schools, with a total of 853 registered TKA participants. The sample was selected purposively in coordination with the Kediri Regency Education Office and the Kediri Regency Education Council. Selection considerations included the representation of urban, semi-urban, and rural areas, as well as the representation of public and private/Islamic schools. Purposive sampling was employed because the study required educational institutions that were directly relevant to the evaluation objectives of CBT-based TKA implementation (Campbell et al., 2020; Andrade, 2021).

Data were collected using a monitoring instrument developed by the Kediri Regency Education Council with reference to the TKA monitoring guidelines issued by the Ministry of Primary and Secondary Education. Data collection procedures included structured observation, completion of checklists, Likert-scale assessments, document review, and confirmation through interviews or consultations with principals, proctors, technicians, and examination committee members. The observed aspects included the readiness of computer devices, internet connectivity, servers, electricity, backup power sources, examination rooms, student administration, human resources, and the smooth implementation of the examination on the scheduled day.

The research instrument consisted of two components. The first was a 29-item dichotomous checklist with “Yes” and “No” response options, divided into four sections: Policy Understanding and Socialization, Technical and Infrastructure Readiness, Human Resources and Administration, and Implementation Process and Student Experience. The second component was a five-point Likert scale used to assess implementation quality across a 13-item Preparation Dimension and an 11-item Implementation Dimension. A score of 1 represented a very poor condition, whereas a score of 5 represented a very good condition.

The research instrument was developed by adapting the monitoring instrument of the Kediri Regency Education Council, which referred to the *2026 Guidelines for the Implementation of the Academic Ability Test at the Elementary School Level* issued by the Ministry of Primary and Secondary Education. The development of the instrument’s dimensions and indicators was also informed by the Context, Input, Process, and Product (CIPP) program evaluation model, particularly its context, input, and process components, which emphasize the assessment of policy understanding, resource readiness, and program implementation (Stufflebeam & Coryn, 2014). Indicators concerning the readiness of devices, servers, internet connectivity, electricity, human resources, and the management of technical disruptions were based on the concepts of readiness and reliability in computer-based assessment implementation (Davey et al., 2011; Perry, Meissel, & Hill, 2022; Shute & Rahimi, 2017). Furthermore, the use of a structured monitoring instrument was based on the principle that systematic evaluation can improve data objectivity and generate more credible recommendations for program improvement (Sanjaya, Mardiyono, & Suprianto, 2021).

*Corresponding Autor : Ali Muchasan

Vol 12, No 1, Juli 2026, Hal 1-21
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v12i1.28798

Table 1. Research Instrument Blueprint

Instrument Component	Dimension/Section	Number of Items	Scoring Format	Aspects Assessed
Dichotomous checklist	Policy Understanding and Dissemination	7	Yes/No	Understanding of TKA policies and dissemination of information to school communities and parents
Dichotomous checklist	Technical and Infrastructure Readiness	7	Yes/No	Availability of devices, networks, servers, electricity, backup power, and examination rooms
Dichotomous checklist	Personnel and Administration	8	Yes/No	Readiness of proctors, technicians, examination committees, participant documents, and test administration
Dichotomous checklist	Implementation Process and Student Experience	7	Yes/No	Smoothness of implementation, adherence to schedules, technical constraints, and students' testing experiences
Likert scale	Preparation Dimension	13	1–5	Quality of technical and administrative preparation, personnel readiness, simulations, and supporting facilities
Likert scale	Implementation Dimension	11	1–5	Quality of test-day implementation, smooth operation of CBT, procedural compliance, and student comfort

Source: Adapted from the Ministry of Primary and Secondary Education (2026), Davey et al. (2011), Stufflebeam and Coryn (2014), Shute and Rahimi (2017), Sanjaya, Mardiyono, and Suprianto (2021), and Perry, Meissel, and Hill (2022).

Data were analyzed using descriptive quantitative techniques. Checklist data were analyzed by calculating the frequency and percentage of fulfilled criteria for each item, each section, and the instrument as a whole. A "Yes" response was assigned a score of 1, whereas a "No" response was assigned a score of 0. Likert-scale data were analyzed by calculating the mean score for each item, each dimension, and the overall mean score for

*Corresponding Autor : Ali Muchasan

Vol 12, No 1, Juli 2026, Hal 1-21
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v12i1.28798

each school. The results were categorized as follows: scores below 3.00 were classified as Poor, scores ranging from 3.00 to 3.99 as Good, and scores of 4.00 or higher as Very Good. The analysis was also conducted according to school status and district location to identify patterns of achievement and disparities among educational institutions. The data and school coverage were based on the previously prepared research manuscript.

RESULT

The findings indicate that the 2026 Computer-Based Testing (CBT)-based Academic Ability Test (*Tes Kemampuan Akademik*—TKA) at the elementary school level in Kediri Regency was implemented in 22 sampled schools across 10 districts. The sample comprised 18 public elementary schools and four private/Islamic elementary schools. A total of 853 students were registered for the TKA, of whom 852 attended, resulting in an attendance rate of 99.88%. Only one student, from SDN Mojo, was absent. All sampled schools administered the TKA independently through an online CBT system. Thus, all 22 schools, or 100% of the sample, were able to conduct the assessment at their respective institutions without relying on facilities provided by other schools. General data on the implementation of the 2026 elementary school TKA in Kediri Regency are presented in Table 2.

Table 2. General Statistics on the Implementation of the 2026 Elementary School TKA in Kediri Regency

Indicator	Value
Total Sampled Schools	22 Schools (18 Public, 4 Private)
Districts Covered	10 Districts
Total Registered Participants	853 Students
Participants Present	852 Students (99.88%)
Independent Online CBT Mode	22/22 Schools (100%)
Checklist Compliance	95.5% (609/638 items)
Mean Preparation Dimension Score	4.503 (Very Good)
Mean Implementation Dimension Score	4.257 (Very Good)
Overall Regency Mean	4.380 (Very Good)
Schools Without Backup Power	4 Schools (18%)

Source: Kediri Regency Education Council, 2026.

*Corresponding Autor : Ali Muchasan

JPDN Jurnal Pendidikan Dasar Nusantara
Vol 12, No 1, Juli 2026, Hal 1-21
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v12i1.28798

Based on Table 2, the implementation of the CBT-based elementary school TKA in Kediri Regency demonstrated very good overall performance. The participant attendance rate of 99.88% indicates that almost all registered participants took the TKA as scheduled. The success of all sampled schools in independently administering online CBT also indicates that the schools possessed the basic readiness required to conduct computer-based assessments. In addition, checklist compliance reached 95.5%, with 609 of 638 items fulfilled. The mean score for the Preparation Dimension was 4.503, the mean score for the Implementation Dimension was 4.257, and the overall regency mean was 4.380. All three scores were classified as Very Good. However, the data also show that four schools, or 18% of the sample, did not yet have backup power.

The procedural checklist results show that the overall compliance rate reached 95.5%. The checklist consisted of 29 items applied to 22 sampled schools, resulting in a total of 638 items examined. Of these, 609 items were fulfilled. The checklist covered four sections: Policy Understanding and Dissemination, Technical and Infrastructure Readiness, Human Resources and Administration, and Implementation Process and Student Experience. Details of compliance by checklist section are presented in Table 3.

Table 3. Checklist Compliance by Section

Checklist Section	ɔmpliance (%)	Description
Human Resources and Administration	99.4%	Highest compliance
Policy Understanding and Dissemination	98.7%	Very Good
Technical and Infrastructure Readiness	97.4%	Very Good
Implementation Process and Student Experience	85.7%	Lowest compliance
Overall Checklist Compliance	95.5%	609/638 items fulfilled

Source: Kediri Regency Education Council, 2026.

Table 3 shows that the Human Resources and Administration Section achieved the highest compliance rate, at 99.4%. The Policy Understanding and Dissemination Section achieved a compliance rate of 98.7%, whereas the Technical and Infrastructure Readiness Section achieved 97.4%. The Implementation Process and Student Experience Section recorded the lowest percentage, at 85.7%. Of the 29 checklist items used, 14 were fulfilled by 100% of the sampled schools. With regard to backup power availability, 18 of the 22 schools, or 82%, had a UPS or generator. Meanwhile, four schools, or 18%, did not yet have backup power. These schools were SDN Branggahan Ngadiluwih, SDN Sambi 1 Ringinrejo, SDN Grogol 3, and SDN Bobang 1 Semen.

*Corresponding Autor : Ali Muchasan

Vol 12, No 1, Juli 2026, Hal 1-21
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v12i1.28798

Table 4. Availability of Backup Power

Indicator	Number of Schools	Percent	Description
Schools with Backup Power	18 schools	82%	Have a UPS or generator
Schools Without Backup Power	4 schools	18%	Do not yet have a UPS or generator
Total Sampled Schools	22 schools	100%	All sampled schools

Source: Kediri Regency Education Council, 2026.

The data in Table 4 show that most schools had backup power. However, four schools did not yet have a UPS or generator. Schools without backup power were included among the research findings because electricity is an important component of CBT implementation. These data are also consistent with the assessment results for the Preparation Dimension, particularly item P10 concerning backup power.

The assessment results for the Preparation Dimension show that the regency mean reached 4.503 and was classified as Very Good. The Preparation Dimension consisted of 13 assessment items. Of these 13 items, 12 were classified as Very Good, whereas one was classified as Good. Several items obtained a high mean score of 4.636. These items included server and client readiness, internet connectivity, electrical networks, proctor capacity, supporting personnel capacity, and synchronization or simulation. The lowest-scoring item in the Preparation Dimension was P10, concerning backup power, with a mean of 3.636 and a Good classification. For item P10, five schools received a score of 1.

The assessment results for the Implementation Dimension show that the regency mean reached 4.257 and was classified as Very Good. This mean was lower than that of the Preparation Dimension, which reached 4.503. The difference between the Preparation and Implementation Dimensions was 0.246 points. The highest-scoring item in the Implementation Dimension was L4, concerning schedule adherence, with a mean of 4.727 and a Very Good classification. Item L2, indicating that the TKA did not burden parents, obtained a mean of 4.682 and was classified as Very Good. Item L3, concerning procedural compliance, also obtained a mean of 4.682 and was classified as Very Good. The lower-scoring item was L9, concerning the absence of technical disruptions, with a mean of 3.955 and a Good classification. For item L9, four schools received a score of 1 and seven schools received a score of 4. A summary of the dimension scores is presented in Table 5.

Table 5. Mean Scores for the Assessment Dimensions

Assessment Dimension	Number of Items	Mean	Category
Preparation Dimension	13 items	4.503	Very Good
Implementation Dimension	11 items	4.257	Very Good
Overall Regency Mean	24 items	4.380	Very Good

*Corresponding Autor : Ali Muchasan

JPDN Jurnal Pendidikan Dasar Nusantara
Vol 12, No 1, Juli 2026, Hal 1-21
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v12i1.28798

Source: Kediri Regency Education Council, 2026.

Table 5 shows that all assessment dimensions were classified as Very Good. The Preparation Dimension obtained a higher score than the Implementation Dimension. The overall regency mean of 4.380 indicates that the overall quality of the implementation of the CBT-based elementary school TKA in Kediri Regency in 2026 was classified as Very Good. Details of several important and critical items in the Preparation and Implementation Dimensions are presented in Table 6.

Table 6. Critical Items in the Preparation and Implementation Dimensions

Code	Item	Mean	N (Score 1)	Category
P6	Server and client readiness	4.636	0	Very Good
P10	Backup power	3.636	5	Good
L4	Schedule adherence	4.727	0	Very Good
L9	Absence of technical disruptions	3.955	4	Good
L2	TKA does not burden parents	4.682	0	Very Good

Source: Kediri Regency Education Council, 2026.

Based on Table 6, item P6 concerning server and client readiness obtained a mean of 4.636, was classified as Very Good, and no school received a score of 1. Item P10 concerning backup power obtained a mean of 3.636, was classified as Good, and five schools received a score of 1. Item L4 concerning schedule adherence obtained a mean of 4.727, was classified as Very Good, and was the highest-scoring item. Item L9 concerning the absence of technical disruptions obtained a mean of 3.955, was classified as Good, and four schools received a score of 1. Item L2 indicating that the TKA did not burden parents obtained a mean of 4.682, was classified as Very Good, and no school received a score of 1.

The school composite score was derived from the mean scores of the Preparation and Implementation Dimensions. Based on the recapitulated results, school composite scores ranged from 3.61 to 4.88. The highest score, 4.88, was obtained by SD NU Puncu, whereas the lowest score, 3.61, was obtained by SDN Sambi 1 Ringinrejo. The difference between the highest- and lowest-performing schools was 1.27 points. The five schools with the highest composite scores are presented in Table 7.

Table 7. Five Schools with the Highest Composite Scores

Rank	School Name	District	School Status	Composite Score
1	SD NU Puncu	Puncu	Private/Islamic	4.88
2	SDN Gadungan 4 Puncu	Puncu	Public	4.83
3	SDN Mojo	Mojo	Public	4.82
4	SDN Klanderan Plosoklaten	Plosoklaten	Public	4.82

*Corresponding Autor : Ali Muchasan

Vol 12, No 1, Juli 2026, Hal 1-21
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v12i1.28798

Rank	School Name	District	School Status	Composite Score
5	SD NU Darussalam Semen	Semen	Private/Islamic	4.82

Source: Kediri Regency Education Council, 2026.

Table 7 shows that the five schools with the highest composite scores obtained scores ranging from 4.82 to 4.88. Of these five schools, three were public and two were private/Islamic schools. SD NU Puncu obtained the highest score of 4.88. SDN Gadungan 4 Puncu obtained a score of 4.83. SDN Mojo, SDN Klanderan Plosoklaten, and SD NU Darussalam Semen each obtained a score of 4.82.

Table 8. Five Schools with the Lowest Composite Scores

Rank	School Name	District	School Status	Composite Score
1	SDN Sambi 1 Ringinrejo	Ringinrejo	Public	3.61
2	SDN Papar 1	Papar	Public	3.73
3	SDN Bobang 1 Semen	Semen	Public	3.87
4	SDN Krandang 1 Kras	Kras	Public	3.87
5	SDN Plemahan 2	Plemahan	Public	3.87

Source: Kediri Regency Education Council, 2026.

Table 8 shows that the five schools with the lowest composite scores obtained scores ranging from 3.61 to 3.87. All five schools were public schools. SDN Sambi 1 Ringinrejo obtained the lowest score of 3.61. SDN Papar 1 obtained a score of 3.73. SDN Bobang 1 Semen, SDN Krandang 1 Kras, and SDN Plemahan 2 each obtained a score of 3.87. Based on district location, the schools in the lowest-scoring group were located in Ringinrejo, Papar, Semen, Kras, and Plemahan.

Overall, the research data show that the implementation of the CBT-based elementary school TKA in Kediri Regency in 2026 achieved very good results. The participant attendance rate reached 99.88%, all sampled schools independently administered online CBT, and checklist compliance reached 95.5%. The mean score for the Preparation Dimension was 4.503, the mean score for the Implementation Dimension was 4.257, and the overall regency mean was 4.380. Nevertheless, the data also indicate that several items had not achieved the highest category, particularly backup power and the absence of technical disruptions. In terms of backup power, four schools, or 18% of the sample, did not yet have a UPS or generator. For item P10, five schools received a score of 1, whereas for item L9, four schools received a score of 1. School achievement data show a score range of 1.27 points, from the lowest score of 3.61 to the highest score of 4.88.

DISCUSSION

The findings indicate that the implementation of the elementary school TKA through *Computer-Based Testing* (CBT) in Kediri Regency in 2026 was generally very successful. This achievement is reflected in the participant attendance rate of 99.88%, the

*Corresponding Autor : Ali Muchasan

JPDN
Jurnal Pendidikan Dasar Nusantara
Vol 12, No 1, Juli 2026, Hal 1-21
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v12i1.28798

successful independent administration of online CBT by all sampled schools, checklist compliance of 95.5%, a mean Preparation Dimension score of 4.503, a mean Implementation Dimension score of 4.257, and an overall regency mean of 4.380. These findings indicate that elementary schools in Kediri Regency possessed strong initial readiness to adopt standardized digital assessments. In the context of its initial implementation, this achievement is important because the transition from conventional to computer-based assessment involves not merely a change in the testing medium but also changes in governance involving devices, networks, proctors, technicians, participant administration, and procedural compliance. McCarthy, Maor, McConney, and Cavanaugh (2023:1-2) explained that digital transformation in education requires a systemic approach, change leadership, coordination, and organizational readiness, rather than merely the provision of technological devices.

The participant attendance rate of 99.88% indicates that schools were able to manage communication, scheduling, and participant readiness effectively. In large-scale assessments, participant attendance is an important indicator because it determines the representativeness of the assessment data. When attendance is low, assessment results may not fully represent participants' conditions. The nearly complete attendance rate in this study indicates positive acceptance of the elementary school TKA by schools, students, and parents. This condition is also supported by the score of 4.682 for item L2, indicating that the TKA did not burden parents. This finding may be interpreted as evidence that schools were able to independently provide implementation facilities, so parents did not have to bear the costs of devices, technical expenses, or travel to another test location. Haleem, Javaid, Qadri, and Suman (2022:276-278) stated that digital technology in education can improve the efficiency of educational services when institutions have adequate facilities, access, and operational support.

Procedural compliance of 95.5% indicates that educational institutions followed most of the TKA implementation requirements. Such compliance is important because standardized assessments require consistent procedures to ensure that the resulting data can be fairly compared across schools. In digital assessments, procedures concern not only administration but also system security, session arrangements, device readiness, disruption management, and the validity of implementation conditions. Fishbein, Martin, Mullis, and Foy (2018:2-5) explained that the transition from paper-based to computer-based assessment requires attention to mode equivalence, technical consistency, and the comparability of results. Accordingly, the high level of checklist compliance in Kediri Regency indicates that schools were able to perform administrative and technical functions in a relatively consistent manner. However, the lower compliance rate in the Implementation Process and Student Experience Section, at 85.7%, indicates that administrative compliance does not fully guarantee smooth operational implementation in the field.

The difference between the Preparation and Implementation Dimensions was also an important finding. The mean Preparation Dimension score of 4.503 was higher

*Corresponding Autor : Ali Muchasan

JPDN Jurnal Pendidikan Dasar Nusantara
Vol 12, No 1, Juli 2026, Hal 1-21
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v12i1.28798

than the mean Implementation Dimension score of 4.257. The difference of 0.246 points indicates that pre-assessment readiness was stronger than implementation stability on the test day. This may occur because preparation can be controlled through checklists, simulations, and preliminary coordination, whereas test-day implementation is influenced by dynamic factors such as electricity stability, internet connectivity, system login, participant readiness, and technical responses when disruptions occur. Granić and Marangunić (2022:9726-9730) explained that the successful adoption of educational technology is influenced by facilitating conditions, ease of access, system complexity, technology anxiety, and institutional support. Therefore, although schools demonstrated very good preparation, CBT implementation still required strong and responsive technical support.

The most critical finding in this study was the availability of backup power. The data show that four schools, or 18% of the sample, did not have a UPS or generator. In addition, for item P10 concerning backup power, five schools received a score of 1. Item L9 concerning the absence of technical disruptions also obtained a mean of 3.955, with four schools receiving a score of 1. The relationship between limited backup power and the occurrence of technical disruptions indicates that electricity is a fundamental component of CBT implementation. In digital assessment, electricity is not merely a supporting facility but a prerequisite for the continuity of the examination. Shmis, Ustinova, and Chugunov (2019:21-29) emphasized that school infrastructure affects the quality of educational processes because a stable, safe, and appropriate learning environment provides the foundation for academic activities. Accordingly, schools without backup power face greater operational risks than schools equipped with a UPS or generator.

This condition indicates that the issue of backup power should be understood as a structural problem rather than merely a temporary technical constraint. The four schools without backup power were still able to administer the TKA, but their implementation was more vulnerable to disruption in the event of a power outage or unstable electricity supply. In standardized assessment, such risks should be minimized because they may affect participant experience and equality of implementation. Machusky and Herbert-Berger (2022:1-3) explained that online learning infrastructure at the K-12 level includes devices, connectivity, technical support, and overall school system readiness. OECD (2023:54-102) also emphasized that a digital education ecosystem should include digital infrastructure, assessment platforms, data governance, and equitable access. Therefore, the provision of a UPS or generator is not merely a short-term technical requirement but part of a strategy to strengthen the reliability of digital assessment.

In terms of technical readiness, the score of 4.636 for item P6 concerning server and *client* readiness indicates that most schools were able to provide the principal devices required for CBT implementation. High scores for internet connectivity, electrical networks, proctor capacity, supporting personnel capacity, and synchronization or simulation also indicate that schools possessed good operational readiness. This finding

*Corresponding Autor : Ali Muchasan

JPDN Jurnal Pendidikan Dasar Nusantara
Vol 12, No 1, Juli 2026, Hal 1-21
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v12i1.28798

demonstrates that schools had the technical capacity required to conduct computer-based assessments. Prisacari and Danielson (2017:1-10) explained that CBT can be effectively implemented when the design of the assessment, devices, and environmental support reduce the technical burden on participants. Jurāne-Bremane (2023:1-18) also stated that digital assessment should be understood as part of a digital learning ecosystem that simultaneously requires pedagogical and technical readiness. Therefore, the readiness of servers, devices, proctors, and simulations should be continuously maintained through regular training and device maintenance.

In terms of implementation, the score of 4.727 for item L4 concerning schedule adherence indicates that schools were able to manage the examination in a disciplined manner. Schedule adherence is important because digital assessments are often conducted in designated sessions that require time management, device readiness, and participant synchronization. The high score for item L2 also indicates that TKA implementation did not impose a significant burden on parents. These two findings demonstrate that the implementation of the elementary school TKA in Kediri Regency fulfilled the requirements of orderliness and accessibility. UNESCO (2023:1-28) emphasized that technology in education is beneficial only when its use considers access, governance, and user readiness, rather than merely following the trend of digitalization. Therefore, the ability of schools to maintain schedules and avoid burdening parents is an important indicator that the CBT-based TKA was implemented in a relatively inclusive manner.

Disparities in achievement among schools were another finding that should be interpreted cautiously. School composite scores ranged from 3.61 to 4.88, a difference of 1.27 points. The five highest-ranked schools achieved very high scores, whereas all five lowest-ranked schools were public schools, many of which were located in peripheral districts. This finding indicates that the very good regency mean did not necessarily eliminate disparities among schools. Mustafa, Nguyen, and Gao (2024:1-12) explained that technology integration in rural schools frequently faces challenges related to limited devices, connectivity, technical support, digital competence, and sustainable financing. Accordingly, the position of several peripheral schools in the lower-performing group should not be interpreted directly as a weakness in school management but should be understood within the context of inequalities in the digital ecosystem.

The finding that two of the five highest-ranked schools were private/Islamic schools, namely SD NU Puncu and SD NU Darussalam Semen, indicates that public or private status is not the sole predictor of the quality of TKA implementation. The study data show that private/Islamic schools can achieve high levels of readiness when supported by sound governance, community support, and technical readiness. Pettersson (2021:190-196) explained that school digitalization is influenced by interactions among actors, practices, organizational structures, and institutional contexts. Therefore, successful TKA implementation is more appropriately understood as the result of interactions among technical readiness, school leadership, committee coordination,

*Corresponding Autor : Ali Muchasan

Vol 12, No 1, Juli 2026, Hal 1-21
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v12i1.28798

human resource support, and infrastructure conditions, rather than solely as a consequence of institutional status.

The findings also reinforce the importance of monitoring and evaluation as mechanisms for continuous improvement. The instrument used in this study was able to identify both overall achievements and critical issues, such as backup power, technical disruptions, and disparities among peripheral schools. Without structured monitoring and evaluation, the achievement of 100% independent online CBT implementation and the overall mean of 4.380 might have been interpreted as complete success without qualification. OECD (2024:1-20) explained that large-scale assessments require standardized procedures, technical documentation, and process transparency to maintain the comparability and validity of results. Therefore, elementary school TKA monitoring and evaluation should be institutionalized as an annual agenda so that local governments possess longitudinal data on the development of school readiness.

Overall, the findings indicate that the initial implementation of the CBT-based elementary school TKA in Kediri Regency achieved a high level of success but still required strengthening in terms of infrastructure resilience and the equitable distribution of school capacity. High achievement in participant attendance, checklist compliance, preparation, and implementation indicates that schools were capable of adapting to digital assessment. However, the findings concerning backup power and disparities among schools indicate that this success was not yet fully equitable. The World Bank (2024:1-12) emphasized that digital education policies should focus on equity, system resilience, relevance, and the use of evidence to strengthen learning outcomes. Therefore, follow-up policies for the elementary school TKA in Kediri Regency should focus on establishing backup power as a prerequisite for independent CBT, providing affirmative infrastructure support for peripheral schools, strengthening the capacity of proctors and technicians, and institutionalizing monitoring and evaluation as a basis for primary education quality planning.

CONCLUSION

Based on the objective of this study, namely to evaluate the implementation of the elementary school Academic Ability Test (TKA) through *Computer-Based Testing* (CBT) in Kediri Regency in 2026 in terms of procedural compliance and technical infrastructure readiness, it can be concluded that the implementation of the elementary school TKA was generally very successful. This is demonstrated by a participant attendance rate of 99.88%, the successful independent administration of online CBT by all sampled schools, and procedural checklist compliance of 95.5%. The mean Preparation Dimension score of 4.503, the Implementation Dimension score of 4.257, and the overall regency mean of 4.380 indicate that the sampled schools possessed adequate

*Corresponding Autor : Ali Muchasan

Vol 12, No 1, Juli 2026, Hal 1-21
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v12i1.28798

administrative, technical, and operational readiness to conduct computer-based assessments.

The findings also show that school readiness was evident not only in technical aspects, such as servers, devices, internet networks, proctors, and simulations, but also in implementation aspects, including schedule adherence, procedural compliance, and the limited burden imposed on parents. Accordingly, the initial implementation of the elementary school TKA in Kediri Regency may be regarded as a positive achievement in the transformation of digital assessment at the primary education level.

Nevertheless, this study identified several aspects requiring attention. The absence of backup power in four schools, or 18% of the sample, was a critical finding because it was associated with the risk of technical disruptions during CBT implementation. In addition, the 1.27-point range in composite scores among schools indicates that TKA implementation outcomes were not yet fully equitable. Schools in peripheral areas tended to require further support, particularly in strengthening ICT infrastructure and providing technical assistance.

As a follow-up measure, local governments and educational institutions should use the monitoring results as a basis for planning improvements in the quality of TKA implementation in the following year. The provision of UPS units or generators as backup power sources, the strengthening of proctor and technician capacity, assistance for schools in peripheral areas, and the institutionalization of elementary school TKA monitoring and evaluation as an annual agenda are required to ensure that computer-based assessment becomes increasingly reliable, equitable, and sustainable.

REFERENCE

Al-Amri, S. (2007). Computer-based vs. paper-based testing: Does the test administration mode matter? *Proceedings of the BAAL Conference 2007*, 101–110.

Andrade, C. (2021). The inconvenient truth about convenience and purposive samples. *Indian Journal of Psychological Medicine, 43*(1), 86–88. https://doi.org/10.1177/0253717620977000

Barrett, P., Treves, A., Shmis, T., Ambasz, D., & Ustinova, M. (2019). *The impact of school infrastructure on learning: A synthesis of the evidence*. World Bank. https://doi.org/10.1596/978-1-4648-1378-8

Black, P., & Wiliam, D. (2009). Developing the theory of formative assessment. *Educational Assessment, Evaluation and Accountability, 21*(1), 5–31. https://doi.org/10.1007/s11092-008-9068-5

Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., Bywaters, D., & Walker, K. (2020). Purposive sampling: Complex or simple? Research case examples. *Journal of Research in Nursing, 25*(8), 652–661. https://doi.org/10.1177/1744987120927206

*Corresponding Autor : Ali Muchasan

JPDN Jurnal Pendidikan Dasar Nusantara
Vol 12, No 1, Juli 2026, Hal 1-21
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v12i1.28798

Davey, T., Pitoniak, M. J., & Eignor, D. R. (2011). Psychometric considerations in computerized testing. In S. Downing & T. Haladyna (Eds.), *Handbook of test development* (pp. 467–484). Routledge.

Kediri Regency Education Council. (2026). *Monitoring and evaluation report on the implementation of the elementary school-level TKA in Kediri Regency in 2026*. Kediri Regency Education Council.

Fishbein, B., Martin, M. O., Mullis, I. V. S., & Foy, P. (2018). The TIMSS 2019 Item Equivalence Study: Examining mode effects for computer-based assessment and implications for measuring trends. *Large-scale Assessments in Education, 6*, Article 11. https://doi.org/10.1186/s40536-018-0064-z

Godaert, E., Aesaert, K., Voogt, J., & van Braak, J. (2022). Assessment of students' digital competences in primary school: A systematic review. *Education and Information Technologies, 27*, 9953–10011. https://doi.org/10.1007/s10639-022-11020-9

Granić, A., & Marangunić, N. (2022). Educational technology adoption: A systematic review. *Education and Information Technologies, 27*, 9725–9744. https://doi.org/10.1007/s10639-022-10951-7

Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers, 3*, 275–285. https://doi.org/10.1016/j.susoc.2022.05.004

Horkay, N., Bennett, R. E., Allen, N., Kaplan, B., & Yan, F. (2006). Does it matter if I take my writing test on computer? An empirical study of mode effects in NAEP. *Journal of Technology, Learning, and Assessment, 5*(2), 1–49.

Jurāne-Bremane, A. (2023). Digital assessment in technology-enriched education: Thematic review. *Education Sciences, 13*(5), 522. https://doi.org/10.3390/educsci13050522

Ministry of Primary and Secondary Education. (2026). *Guidelines for the implementation of the Academic Ability Test (TKA) at the elementary school level in 2026*. Ministry of Primary and Secondary Education.

Li, M. (2025). Exploring the digital divide in primary education: A comparative study of urban and rural mathematics teachers' TPACK and attitudes towards technology integration in post-pandemic China. *Education and Information Technologies, 30*, 1913–1945. https://doi.org/10.1007/s10639-024-12890-x

Machusky, J. A., & Herbert-Berger, K. G. (2022). Understanding online learning infrastructure in U.S. K-12 schools: A review of challenges and emerging trends. *International Journal of Educational Research, 114*, 101993. https://doi.org/10.1016/j.ijer.2022.101993

McCarthy, A. M., Maor, D., McConney, A., & Cavanaugh, C. (2023). Digital transformation in education: Critical components for leaders of system change. *Social Sciences & Humanities Open, 8*(1), 100479. https://doi.org/10.1016/j.ssaho.2023.100479

*Corresponding Autor : Ali Muchasan

JPDN
Jurnal Pendidikan Dasar Nusantara
Vol 12, No 1, Juli 2026, Hal 1-21
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v12i1.28798

Mustafa, F., Nguyen, H. T. M., & Gao, X. (2024). The challenges and solutions of technology integration in rural schools: A systematic literature review. *International Journal of Educational Research, 126*, 102380. https://doi.org/10.1016/j.ijer.2024.102380

OECD. (2023). *OECD digital education outlook 2023: Towards an effective digital education ecosystem*. OECD Publishing. https://doi.org/10.1787/c74f03de-en

OECD. (2024). *PISA 2022 technical report*. OECD Publishing. https://doi.org/10.1787/01820d6d-en

Regulation of the Minister of Education and Culture Number 75 of 2016 concerning School Committees.

Perry, K., Meissel, K., & Hill, M. F. (2022). Rebooting assessment: Exploring the challenges and benefits of shifting from pen-and-paper to computer in summative assessment. *Educational Research Review, 36*, 100451. https://doi.org/10.1016/j.edurev.2022.100451

Pettersson, F. (2021). Understanding digitalization and educational change in school by means of activity theory and the levels of learning concept. *Education and Information Technologies, 26*, 187–204. https://doi.org/10.1007/s10639-020-10239-8

Prasetyo, H., & Hermawan, A. (2022). Disparities in school ICT infrastructure and their implications for the implementation of computer-based assessment. *Jurnal Teknologi Pendidikan, 24*(1), 35–52.

Prisacari, A. A., & Danielson, J. (2017). Computer-based versus paper-based testing: Investigating testing mode with cognitive load and scratch paper use. *Computers in Human Behavior, 77*, 1–10. https://doi.org/10.1016/j.chb.2017.07.044

Sanjaya, R., Mardiyono, & Suprianto, B. (2021). The effectiveness of structured-instrument-based monitoring and evaluation in local education policy. *Jurnal Administrasi Publik, 19*(2), 88–105.

Shepard, L. A. (2000). The role of assessment in a learning culture. *Educational Researcher, 29*(7), 4–14. https://doi.org/10.3102/0013189X029007004

Shute, V. J., & Rahimi, S. (2017). Review of computer-based assessment for learning in elementary and secondary education. *Journal of Computer Assisted Learning, 33*(1), 1–19. https://doi.org/10.1111/jcal.12172

Story, D. A., & Tait, A. R. (2019). Survey research. *Anesthesiology, 130*(2), 192–202. https://doi.org/10.1097/ALN.0000000000002436

Stufflebeam, D. L., & Coryn, C. L. S. (2014). *Evaluation theory, models, and applications* (2nd ed.). Jossey-Bass.

UNESCO. (2023). *Global education monitoring report 2023: Technology in education: A tool on whose terms?* UNESCO. https://doi.org/10.54676/UZQV8501

Law Number 20 of 2003 concerning the National Education System.

*Corresponding Autor : Ali Muchasan

Vol 12, No 1, Juli 2026, Hal 1-21
ISSN 2579-6461 (Online) ISSN 2460-6324 (Print)
DOI: https://doi.org/10.29407/jpdn.v12i1.28798

Van de Werfhorst, H. G., Kessenich, E., & Geven, S. (2022). The digital divide in online education: Inequality in digital readiness of students and schools. *Computers and Education Open*, *3*, 100100. https://doi.org/10.1016/j.caeo.2022.100100

Wang, X., & Cheng, Z. (2020). Cross-sectional studies: Strengths, weaknesses, and recommendations. *Chest*, *158*(1S), S65–S71. https://doi.org/10.1016/j.chest.2020.03.012

World Bank. (2024). *Digital pathways for education: Enabling greater impact for all*. World Bank.

*Corresponding Autor : Ali Muchasan