Student Perceptions Regarding the Use of a Computer-Based Test (CBT) System at State Junior High School 3 Sungai Betung

Prima Senja Sis Ha Abadi¹, Indri Astuti², Eny Enawaty³

¹Master of Educational Technology, Faculty of Teacher Training and Education, Universitas Tanjungpura, Kalimantan Barat Indonesia
Email: f2151221008@student.untan.ac.id

²Master of Educational Technology, Faculty of Teacher Training and Education, Universitas Tanjungpura, Kalimantan Barat Indonesia
Email: indri.astuti@fkip.untan.ac.id

³Master of Educational Technology, Faculty of Teacher Training and Education, Universitas Tanjungpura, Kalimantan Barat Indonesia
Email: eny.enawaty@fkip.untan.ac.id

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Abstrak. Penggunaan sistem penilaian berbasis komputer (PBK) di dunia pendidikan semakin meningkat, namun persepsi siswa terhadapnya masih kurang diteliti. Penelitian ini bertujuan untuk mengetahui persepsi siswa terhadap penggunaan CBT di SMPN 3 Sungai Betung, sebuah sekolah menengah pertama di Kabupaten Bengkayang Provinsi Kalimantan Barat. Penelitian ini menggunakan metode kuantitatif dengan instrumen angket yang diisi oleh 94 siswa. Hasil penelitian menunjukkan bahwa siswa memiliki tanggapan positif terhadap CBT, baik dari segi kepercayaan, kenyamanan, maupun kinerja akademik. Namun, siswa juga menghadapi kendala teknis, seperti masalah jaringan dan pengoperasian HP. Penelitian ini merekomendasikan peningkatan literasi teknologi, pelatihan tambahan, dan pemastian ketersediaan jaringan yang baik dan mumpuni untuk optimalisasi CBT. Penelitian ini juga menekankan peran guru dalam mendukung siswa mengatasi kendala teknis, serta perhatian terhadap aspek keadilan dalam akses teknologi. Dengan demikian, CBT dapat menjadi alat evaluasi yang efektif dan sarana peningkatan kualitas pembelajaran dan kesiapan teknologi siswa

Keywords: Student Perception; Computer-Based Assessment System;

Abstract. The use of computer-based assessment (CBT) in education is increasing, but students’ perceptions of it are still under-researched. This study aims to explore students’ perceptions of the use of CBT in SMPN 3 Sungai Betung, a junior high school in South Kalimantan. This study uses a quantitative method with a questionnaire instrument filled by 94 students. The results show that students have positive responses to CBT, in terms of trust, comfort, and academic performance. However, students also face
technical constraints, such as network problems and HP operation. This study recommends improving technological literacy, additional training, and ensuring the availability of good and adequate networks for CBT optimization. This study also emphasizes the role of teachers in supporting students to overcome technical constraints, as well as attention to the aspect of justice in technology access. Thus, CBT can be an effective evaluation tool and a means of improving the quality of learning and students’ technological readiness.

INTRODUCTION

Currently, we are in the era of the fourth industrial revolution characterized by rapid technological development (Reflianto & Syamsuar, 2018). The world is currently undergoing a revolution in the application of information technology known as digitization (Maiyana, 2018). This era demands a change in thinking and perspective about education, including more use of technology in learning (Rahman & Nuryana, 2019; Sadewo, 2021; Gea et al., 2023). The utilization of technology can create an academic environment suitable for the fourth industrial revolution (Setiawan et al., 2019). Therefore, in this era, the use of technology in education becomes very important to prepare students to face the changes and demands of the times.

Education as the primary foundation for shaping an excellent generation is increasingly influenced by technology, especially in the context of assessment (Koomen and Zoanetti, 2018; Purnasari, 2020). Assessment is one of the crucial components in the learning process aimed at gathering information about the process and outcomes of students’ learning (Maharani et al., 2022). Currently, Computer-Based Assessment (CBA) or Computer-Based Testing (CBT) is becoming increasingly popular worldwide due to the advantages it offers. Computer-based assessment is a performance measurement process that utilizes computer technology as a means of data collection and processing of results (Prissly & Hidayat, 2023).

According to Balan, Sudarmin, & Kustiono (2017), Computer-Based Assessment (CBA) or Computer-Based Testing (CBT) provides advantages in terms of time, cost, and consistency of measurement results. In his research, Zulkifli (2022) states that computer-based assessment systems are expected to enhance the effectiveness and efficiency of the learning process. Adio (2019) suggests that this approach allows teachers to focus more on delivering content and direct interaction with students, while the assessment process can be automated. Wahyudi (2017) also indicates that technology-based assessment systems can save costs in conducting examinations at schools. Additionally, student engagement
can be influenced using technology in assessment, particularly computer-based assessment systems (Ghufron & Sutama, 2020). However, it is essential to consider its impact on student perceptions, as this could be a critical aspect affecting the acceptance of this innovation in the education sector.

The decision of SMPN 3 Sungai Betung, Sungai Betung District, Bengkayang Regency, West Kalimantan Province to adopt Computer-Based Test (CBT) since the academic year 2022/2023 reflects a response to technological advancements and global demands in education. However, the success of implementing this system also depends on students' perceptions of its usage. Therefore, in-depth analysis is needed to understand students' views on the computer-Based Test (CBT) system. Yulianti (2019) emphasizes the importance of exploring the extent to which the implementation of this system aligns with local needs and conditions. Students' opinions are key indicators for evaluating the success of computer-based assessment systems (Yulianti, 2019). Based on this, the research problem formulation is: what are students' perceptions of the use of the computer-Based Test (CBT) system at SMPN 3 Sungai Betung?

This research will explore students' opinions regarding the implementation of the computer-Based Test (CBT) system at SMPN 3 Sungai Betung, including evaluation, identification of influencing factors, and recommendations for improvement. The urgency lies in the necessity to align technology adoption with local needs and expectations. By understanding students' perspectives, this research can enhance the effectiveness of using the computer-Based Test (CBT) system at SMPN 3 Sungai Betung.

SMPN 3 Sungai Betung, as part of the global transformation in education, faces challenges during the adoption of this technology. This research will identify barriers and opportunities that may arise during this process. Technology adoption is an evolution, and continuous evaluation is required for sustainability and improvement. The findings of this research can provide valuable contributions to the development of educational strategies in the future at SMPN 3 Sungai Betung.

**METHOD**

This research utilizes the survey method, which is a process of collecting information at a specific time with the aim of describing the existing situation, identifying benchmarks that can be compared with the existing situation, or finding relationships between specific events (Cohen, Manion & Morrison, 2018). This approach is often used in research to explore the views, attitudes, or behaviors of a group regarding a particular
The advantages of the survey research method include time and cost efficiency, the ability to collect data from many respondents, and the opportunity to identify patterns of behavior or respondents' views.

The selection of the sample is a crucial step in survey research methodology. A representative sample is considered to reflect more relevant and better research outcomes (Sugiyono, 2013, p.81). This research utilizes the saturated sampling technique, also known as census, involving all students of SMPN 3 Sungai Betung. During the survey implementation, data are collected through questionnaires distributed to the respondents.

Data in this study are collected through the use of questionnaires. The type of questionnaire employed is a closed-ended or structured questionnaire, consistent with the research conducted by Zulkifli (2022). A closed-ended questionnaire is a type of questionnaire where answer options are provided, and respondents are asked to select one answer that best fits their characteristics. This questionnaire is analyzed using the Likert scale. The aspects addressed in the questionnaire include respondent information, respondents' perceptions regarding the use of computer-based assessment, and any obstacles respondents may face in using computer-based assessment (Zulkifli, 2022).

The answer options provided in the questionnaire include five choices, namely: 1 = Very Dissatisfied, 2 = Dissatisfied, 3 = Neutral, 4 = Satisfied, and 5 = Very Satisfied. All student responses will be processed and analyzed using a certain formula. To determine the percentage category of student responses to computer-based assessment, the response results will be analyzed using the following formula:

\[
\frac{\text{Jumlah Skor yang diperoleh Pada Setiap Item}}{\text{Jumlah Skor Ideal Pada Setiap Item}} \times 100
\]

The scoring criteria for this research also refer to Zulkifli’s study (2022) to determine the categories of student responses as in the following table:

<table>
<thead>
<tr>
<th>Interval</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>0% - 20%</td>
<td>Very Unsatisfied</td>
</tr>
<tr>
<td>21% - 40%</td>
<td>Unsatisfied</td>
</tr>
<tr>
<td>41% - 60%</td>
<td>Quite Dissatisfied</td>
</tr>
<tr>
<td>61% - 80%</td>
<td>Satisfied</td>
</tr>
<tr>
<td>81% - 100%</td>
<td>Very Satisfied</td>
</tr>
</tbody>
</table>

Adopted from Zulkifli (2022)
RESULTS AND DISCUSSIONS

Research Results

This study was conducted at the beginning of the second semester of the 2023/2024 academic year at SMPN 3 Sungai Betung with a sample of all students totaling 99 individuals, but only 94 were present during the research. Questionnaire completion was done on paper due to school regulations that only allow bringing smartphones at certain times, and not all students have smartphones.

It is important to note that SMPN 3 Sungai Betung has implemented Computer-Based Test (CBT) since the Academic Year 2022/2023. Therefore, eighth and ninth-grade students already have experience using Computer-Based Test (CBT) several times, while seventh-grade students are using it for the first time in the mid-semester exam of the 2023/2024 academic year. For students who do not have smartphones, they will be provided with school-owned laptops, tablets, or Chromebooks during the computer-based assessment.

<table>
<thead>
<tr>
<th>No.</th>
<th>Statement</th>
<th>Percentage</th>
<th>Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Saya senang mengikuti ujian secara daring</td>
<td>68%</td>
<td>Senang/Setuju</td>
</tr>
<tr>
<td>2</td>
<td>Saya senang mengikuti ujian melalui CBT</td>
<td>86%</td>
<td>Sangat Senang/ Setuju</td>
</tr>
<tr>
<td>3</td>
<td>Saya senang mengerjakan soal melalui CBT</td>
<td>88%</td>
<td>Sangat Senang/ Setuju</td>
</tr>
<tr>
<td>4</td>
<td>Soal yang di sajikan melalui CBT mudah</td>
<td>82%</td>
<td>Sangat Senang/ Setuju</td>
</tr>
<tr>
<td>5</td>
<td>Ujian lebih efektif saat menggunakan CBT</td>
<td>93%</td>
<td>Sangat Senang/ Setuju</td>
</tr>
<tr>
<td>6</td>
<td>Ujian melalui CBT lebih praktis</td>
<td>87%</td>
<td>Sangat Senang/ Setuju</td>
</tr>
<tr>
<td></td>
<td>Saya lebih fokus mengerjakan soal menggunakan CBT</td>
<td>73%</td>
<td>Senang/ Setuju</td>
</tr>
<tr>
<td>7</td>
<td>Ujian menggunakan CBT dapat meningkatkan prestasi akademik</td>
<td>77%</td>
<td>Senang/ Setuju</td>
</tr>
<tr>
<td>8</td>
<td>Ujian menggunakan CBT membuat saya melek teknologi</td>
<td>90%</td>
<td>Sangat Senang/ Setuju</td>
</tr>
<tr>
<td>9</td>
<td>Saya tidak bisa melakukan kecurangan (menyontek) saat ujian menggunakan CBT</td>
<td>97%</td>
<td>Sangat Senang/ Setuju</td>
</tr>
<tr>
<td>10</td>
<td>Saya kurang mahir mengoperasikan CBT menggunakan HP</td>
<td>41%</td>
<td>Tidak Senang/ Setuju</td>
</tr>
<tr>
<td>11</td>
<td>Saya lebih senang mengakses CBT pada PC/ Laptop</td>
<td>48%</td>
<td>Cukup senang/ Setuju</td>
</tr>
<tr>
<td>12</td>
<td>Kendala terbesar saya mengikuti ujian melalui CBT adalah jaringan</td>
<td>69%</td>
<td>Senang/ Setuju</td>
</tr>
</tbody>
</table>

*The designed questionnaire based on the original source in the Indonesian language

Discussion

The utilization of Computer-Based Test (CBT) has become a global trend, considering the numerous advantages it offers in terms of assessment efficiency and...
consistency. However, it should be realized that there are still technical and social challenges, such as accessibility issues, infrastructure readiness, and the need for adaptation for teachers and students in using such systems.

Research conducted by Riyanto (2016) and Renza (2022) reveals that students' perceptions not only influence their acceptance of new technology but also the effectiveness of Computer-Based Test (CBT) implementation. By considering factors such as ease of use and perceived benefits, this research provides valuable insights that can help in designing and refining computer-based testing systems to better meet the needs and expectations of students. Therefore, understanding students' perceptions is key to promoting the effective acceptance and use of Computer-Based Test (CBT) in educational settings. The Computer-Based Test (CBT) system has become an integral part of the learning process at SMPN 3 Sungai Betung since the Academic Year 2022/2023. Over time, eighth and ninth-grade students at this school have become accustomed to the sensation of online exams. The summary of results indicates that the acceptance of Computer-Based Test (CBT) is quite positive, with the majority of students giving positive responses to this system.

From the survey results, as many as 68% of students stated that they liked online exams, while 86% even felt very happy to take exams through Computer-Based Test (CBT). The peak achievement lies in the fact that as many as 97% of students claimed they were unable to cheat (cheat) while using Computer-Based Test (CBT), reflecting a high level of trust and security in the system. This is in line with research conducted by Yulianti (2019), where learning assessment using technology-based Computer-Based Test (CBT) in schools has complied with the components of the learning assessment principle, thus minimizing cheating during learning assessment.

Not only as an evaluation method, the implementation of Computer-Based Test (CBT) also has a positive impact on students' academic performance. As many as 93% of them stated that exams became more effective when using Computer-Based Test (CBT), and 77% felt that the use of Computer-Based Test (CBT) could improve their academic achievements. In addition, as many as 90% of students felt that the use of Computer-Based Test (CBT) made them more technology literate. Research by Nashihah (2016) found that the Computer-Based Test (CBT) system has a high level of effectiveness and practicality, with an average positive response from students and teachers. Another study by Warsihna (2014) showed that most students have positive opinions about the use of Computer-Based Test (CBT) in learning assessments. Students feel that Computer-Based Test (CBT) is easier, more practical, and more engaging to take exams. Furthermore, similar results were
found in research conducted by Fadillah and Nurhayati (2022) that there was a significant difference between the learning outcomes of students using Computer-Based Test (CBT) and students using Paper-Based Test (PBT), with the average CBT scores higher than Paper-Based Test (PBT). Additionally, students' responses to Computer-Based Test (CBT) were also more positive than Paper-Based Test (PBT). This indicates that Computer-Based Test (CBT) not only serves as an assessment tool but also as a technology education tool that provides real benefits.

However, amidst this positive acceptance, several challenges have also emerged. As many as 41% of students admitted that they are less proficient in operating Computer-Based Test (CBT) using a smartphone. Technical constraints are also a concern, especially regarding network issues acknowledged by 69% of students. Additionally, nearly half of the students (48%) prefer accessing Computer-Based Test (CBT) on Personal Computers (PC) or laptops rather than smartphones. This indicates that device preference plays an important role in the computer-based testing experience. The lack of proficiency of some students in operating Computer-Based Test (CBT) using smartphones should not be seen as a barrier but as an opportunity to improve their technology literacy (Prissly, Hidayat, & Harapan, 2023). Schools can provide additional training or resources to support students in overcoming these obstacles. Furthermore, Prissly, Hidayat, and Harapan (2023) also recommend the need for preventive measures related to network issues, such as ensuring the availability of stable internet access during exams.

It is important to note that device preference also needs to be considered in designing more effective Computer-Based Test (CBT) implementation strategies. Murniati (2023) states that the advantages and disadvantages of computer-based assessment systems should be carefully considered before being used in the appropriate assessment context. Providing access to user-friendly software that is easily accessible from various devices can help address this issue. Additionally, an inclusive approach, considering the diversity of devices used by students, can minimize gaps in the testing experience. In this context, according to Suwangsih (2023), teachers and educational staff play a key role in supporting students in overcoming technical challenges. They can involve students in additional technology training, provide clear guidelines to address common issues that may arise during exams, and support students in enhancing their technology skills.

Overall, the implementation of Computer-Based Test (CBT) at SMPN 3 Sungai Betung has brought significant positive impacts. However, technical challenges and fairness aspects need to be addressed to ensure that this implementation can provide maximum benefits for all students. By continuously developing and improving
implementation strategies, schools can ensure that Computer-Based Test (CBT) becomes not only an evaluation tool but also an effective means of improving the quality of learning and students' technology readiness.

**CONCLUSION**

The use of Computer-Based Test (CBT) at SMPN 3 Sungai Betung has received positive responses, with the majority of students enjoying online exams and trusting their security. Although there are technical challenges such as operational difficulties on smartphones and network issues, students show a preference for using computers or laptops. To maximize the potential of Computer-Based Test (CBT), improving technology literacy, training, and reliable networks are crucial, as well as teacher support in overcoming technical barriers. Further research is needed to evaluate the long-term impact of Computer-Based Test (CBT) on academic achievement and ensure fair access to technology. School initiatives to develop inclusive and responsive strategies will ensure that Computer-Based Test (CBT) becomes an effective tool for enhancing student learning and technology readiness.

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