



USE OF INTRANET FOR CBT-BASED ASSESSMENT (*COMPUTER BASED TEST*) AT SENIOR HIGH SCHOOL

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Abstract

Advances in information and communication technology have had a major impact on various aspects of life, including the education sector. One important innovation in this field is the implementation of Computer-Based Test (CBT) for assessment. The CBT system offers a number of advantages, such as time efficiency, increased assessment accuracy, and ease of data management. On the other hand, the implementation of CBT requires a strong infrastructure, one of which is an intranet network. This study aims to understand how intranets can be optimized in the implementation of CBT assessments, identify the benefits and challenges that arise, and provide recommendations for better implementation. This research method uses existing and trusted literature or references to be analyzed and the results are used to solve the problems being studied. Zed in Kartiningsih's research (2015) said that the literature study method is a series of activities related to the method of collecting library data, reading and recording, and managing materials. The data for this study were collected through direct observation of the implementation process of CBT-based assessments at SMA Negeri 6 Pontianak. Next, to complement the observations and interviews, the researcher did was to record and view documents to analyze the implementation process of CBT-based assessments. The results of the study indicate that the use of intranet in CBT assessment can improve operational efficiency, strengthen data security, and provide flexibility in accessibility. However, challenges such as the need for adequate infrastructure and competent technical expertise still need to be addressed. Recommendations from this study are expected to contribute to educational institutions in optimizing the use of intranet for CBT assessment and provide direction for further research in the future.

Keywords: *Intranet, CBT Assessment, Information Technology, Education.*

INTRODUCTION

Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble morals, and skills needed by themselves, society, nation and state (Government Center, 2003). Education organized by the government and society always aims to ensure that every person who is educated will be able to easily and be ready to face the rapid developments in the world every day, both in terms of their attitudes, knowledge and skills. The increasingly rapid development of information technology in the current era of globalization can no longer be avoided and its influence on the world of education. Global demands require the world of education to

always adapt technological developments to efforts to improve the quality of education, especially adjusting the use of information and communication technology for the world of education, especially in the learning process (Agustian & Salsabila, 2021). The quality of learning today is also determined in terms of how easy it is for educators and students to access learning resources or practicality in using learning media; also the practicality of carrying out assessments or evaluations in learning itself. In the current digital era, the learning paradigm has shifted from traditional learning to learning based on technological developments. The implementation of assessments or assessment of learning outcomes has also experienced development, from evaluations using paper to evaluations based on CBT (Computer Based Test).

CBT is an assessment method that uses computers as the main medium for presenting questions and recording examinee answers. This system replaces traditional paper and pen-based assessment methods, and offers various benefits such as time efficiency, increased assessment accuracy, and ease of data management. The increasingly rapid development of information technology in the current era of globalization can no longer be avoided and its influence on the world of education. However, implementing CBT requires adequate technological infrastructure. One of the key components of this infrastructure is the intranet network. An intranet is a private computer network that uses internet technology to share information and manage operations within an organization. Implementing CBT-based assessment, intranet plays an important role in the distribution of exam materials, collection of answers, automatic scoring, and analysis of exam data.

The use of intranets in CBT-based assessments offers a number of advantages. First, the intranet allows for fast and efficient distribution of exam materials. Teachers can upload exam questions to an intranet server which can then be accessed by examinees via computers connected to the network. Second, collecting answers can be done quickly and in an organized manner. Exam takers can upload their answers to the intranet server, reducing the risk of losing or damaging answer files. Third, automated assessment using special software can reduce teacher workload and increase the accuracy and consistency of assessments. Fourth, exam result data stored on the intranet server can be analyzed to obtain information regarding participant performance, level of difficulty of questions, and others. This analysis can be used to improve curriculum and teaching methods.

However, despite having many benefits, implementing intranets for CBT-based assessments also faces several challenges. First, it requires adequate network infrastructure, including reliable servers and stable network connections, which requires significant initial investment. Second, managing and maintaining an intranet network requires sufficient technical expertise. Educational institutions need to have experts

who are able to handle technical problems that may arise. Third, although intranets offer better security, there are still security risks such as cyber attacks therefore, strict security measures are needed to protect exam data.

Pontianak 6 Public High School is the first public high school in Pontianak to implement internet in carrying out CBT (Computer Based Test) based assessments and final semester assessments of students, starting from 2023 until now. The implementation of this can provide convenience for educators and students. For students, students do not need to provide special quota to take part in the assessment because the quota has been used for the school's intranet quota. Apart from that, students can also carry out assessment activities honestly because they cannot look for answers by browsing the internet on certain sites. Meanwhile, for teachers the CBT (Computer Based Test) application is very helpful because teachers do not need to make corrections and analyze learning results because this application provides analysis of learning results. This CBT (Computer Based Test) application is also equipped with features in the form of questions including multiple choice, essays, both open essays and closed essays, matching, true, false and so on. For school principals, the principal can monitor assessment activities from start to finish. In terms of financing and personnel, it is very effective.

This research aims to understand how intranets can be used optimally in implementing CBT-based assessments, identify the benefits and challenges faced, and provide recommendations for better implementation. The research method used is a qualitative method with a case study approach. Data was collected through in-depth interviews with teachers and technical personnel at several educational institutions that have implemented CBT- based assessments with intranet support. Apart from that, document analysis and direct observation of the CBT-based assessment implementation process were also carried out. It is hoped that the results of this research will provide deeper insight into the importance of using intranets in CBT-based assessments and help educational institutions optimize this technology to improve the quality of education. It is hoped that the

recommendations resulting from this research will help educational institutions overcome existing challenges and utilize intranets more effectively for CBT-based assessments, as well as provide directions for further research in the future.

METHOD

This research was conducted at SMA Negeri 6 Pontianak and the data sources came from the deputy principal, curriculum department, social studies subject teachers, and the CBT Team or exam implementation committee and students. This research uses a "purposive" sampling technique. In purposive sampling, sample selection is directed at data sources that are deemed to have important data related to the problem being researched (Sutopo, 2002). Data collection was carried out by direct observation, interviews and document analysis. The data validity test technique uses data or source triangulation and method triangulation, while the data analysis used is an interactive analysis technique. The steps in this research procedure include the observation stage, preparation stage, and data analysis stage.

RESULTS AND DISCUSSION

RESULTS

The problem at SMA Negeri 6 Pontianak is the economic income of the students' parents, such as parents finding it difficult to buy their children internet quota for the assessment process. Limited funds owned by students' parents is something that must be followed up by the school. Hamalik (2018: 82) said that the level of parental education, economic level, family attitudes towards social problems, the realities of life and so on are factors that will provide experience to children and cause differences in interests, appreciation of attitudes and economic understanding. The alternative that schools do regarding this is the use of Intranet as a substitute for the internet or quota which can be used to support the teaching and learning process and CBT-based assessments. Based on the results of the research that has been carried out, it can be said that the use of the Intranet for CBT-based assessments has mostly gone well. This can be seen from several stages of learning assessment and implementation of CBT at SMA Negeri 6

Pontianak. The stages of assessment or assessment at SMA Negeri 6 Pontianak have been said to be fulfilled based on explanations of the level of mastery, achievement of specific learning objectives (indicators) and general learning objectives (competency standards/basic competencies). Objectives or various indicators and competencies are usually designed in learning planning so that the learning process is intended so that teachers can achieve learning objectives and students can master previously determined competencies.

The use of an intranet for CBT-based assessment used by educational units, educators and students at SMA Negeri 6 Pontianak does not eliminate the essence of learning assessment principles such as continuity, it can be seen that learning assessment at SMA Negeri 6 Pontianak itself goes through a series of complex stages such as an implementation plan. early learning.

The technique for assessing learning outcomes used at SMA Negeri 6 Pontianak during the final semester exams in previous years was to use paper and the examinees were distributed in exam rooms according to their respective classes, the same as when carrying out daily tests by teachers who used final test at the end of each lesson per basic competency in the subject taught. Computers are usually only used for practice in informatics/ICT subjects, computer-based national examination facilities and also for searching for learning resources via the internet by some teachers. The advantage of exams using this paper is that students can take the exam in large numbers at the same time, exam supervisors can be assigned to each room simultaneously. However, the weakness faced is that the questions presented must be the same for all exam participants, and it will take a relatively long time in terms of the process of correcting students' answers, especially if there are students who take the supplementary exam because they are unable to attend on the specified schedule. Comprehensive implementation of learning assessments carries out the cognitive assessment aspect which assesses students' knowledge of the teaching material that has been explained, fairly and objectively. CBT-based assessment trains student independence because students answer questions individually and can minimize

deviant behavior such as cheating. It can be said to be cooperative. CBT-based learning assessment at SMA Negeri 6 Pontianak involves many parties such as the Deputy Principal, Curriculum Division, Committee, CBT Team, Teachers and Students. Lastly, namely practicality, it is clear that there is time efficiency and the lack of equipment and supplies that students must prepare to take part in the CBT-based assessment.

Although in implementation there are certainly several obstacles that arise due to the use of CBT-based assessments, SMA Negeri 6 has been able to minimize the obstacles that arise as a result of switching from a manual system to a computer system. So that problems such as computers, namely the CPU machine or monitor freezing, internet network speed, power outages and if there are still students who are not used to using computers and so on, can be overcome by the school and teachers. So that in the exam implementation process, obstacles that occur when implementing a computer-based system or CBT can be minimized.

DISCUSSION INTRANET

An intranet is a computer network within a company that uses standard data communications such as the internet. This means that we can use all internet facilities for company needs. Intranet can be said to be internet within the company environment (Tung, 2001). In general, the technology used between the internet and intranet is the same. However, there are differences between the internet and intranet from the perspective of reach and scope of use.

Figure 1

Hardware Flow and Intranet Logic

Basically, the Intranet is the same as the internet, the difference is the subject matter or material contained in it. Intranets, usually the subject of discussion at school level is about education or learning. An intranet is a collection of local computer networks that use internet software and TCP/IP or HTTP protocols. Therefore, an intranet network has all the facilities that the internet has, such as e-mail, file transfer protocol (FTP), meaning we can transfer files to each other and so on.

Intranets are very easy to implement, learn, develop and reconfigure, educators just need creativity in how to apply intranets in the learning process. One of the most important things in an intranet is network security.

BENEFITS OF USE OF INTRANET

Learning can be more focused and not influenced by other content, for example online game sites, social networks, because what can be accessed by all intranet users is all material uploaded by the teacher to the server. Such as teaching modules, multi-media devices, video, audio, animation, and of course material uploaded by teachers in accordance with the curriculum implemented by the school.

- a. Teachers can innovate to develop web-based, animated and interactive teaching materials
- b. Students can be more critical of the lessons learned because if the lessons learned are not as expected, students can ask the teacher concerned. This makes teachers more creative in presenting lesson material or questions.
- d. Intranet allows us to have large bandwidth, because it is on a local network (LAN) and a larger data storage volume.
- c. Time efficiency, is the ability to complete tasks or achieve goals in a short time while maintaining an adequate level of quality.
- d. Cost effectiveness, because schools don't just print questions and answer sheets for the assessment process.

INTRANET WEAKNESSES

- a. Incorrect or inappropriate information reduces its effectiveness
- b. Interactions on the intranet that may be irresponsible
- c. Special training is required for members in using the intranet
- d. Experts are needed to build and develop an intranet in an organization or company
- e. Overload (full data) can occur due to sending messages between users that are not properly controlled.

CBT (COMPUTER BASE TEST)

CBT (Computer Baset Test) is a test that

is done on a computer so you don't need paper, pen or pencil to answer the questions. All written questions and answer sheets are provided on the computer so we just have to click on the right or wrong answer or just type if answering essay questions. CBT (Computer Baset Test) is widely implemented in various fields such as education and the world of work. In the field of education, it is usually used to determine the highest score a student has in mastering a subject or course. Meanwhile, in the world of work, CBT (Computer Base Test) is used to determine the basic abilities of a job applicant, making it easier for HRD to select prospective employees.

PROCEDURE USING CBT (COMPUTER BASED TEST)

According to Ahmad Syaiful Ulum, procedures for using CBT (Computer Based Test) include:

- a. The teacher provides direction and instructions on how to use the CBT (Computer Based Test) program
- b. The browser used by students is Chrome
- c. Students log in to the CBT (Computer Based Test) page with their username and password
- d. Exam participants work on the questions according to the instructions
- e. After students have finished working, they are required to log out.

The procedure above is a general procedure that does not yet know the setting for working on the questions. Before the exam is carried out, students have been given initial information about the procedures for using CBT (Computer Baset Test). So the teacher doesn't need a long time to give directions. Students are given a username and password to log in to the CBT (Computer Baset Test) page. Providing a username and password is not carried out during the exam but before the exam is held.

ADVANTAGES OF CBT (COMPUTER BASED TEST)

Implementing a CBT (computer based test) based assessment is not only carried out because there are no benefits to be gained. CBT (computer based test) based assessment has several advantages when compared with conventional methods. Among them is that all

exam processes are carried out via computer, including starting from creating exam questions, class settings, user settings for both educators and students, and implementing exams that utilize web engineering technology (Hartati & Mardiana 2018).

From Endah Mastuti's study, the author cites the advantages of the CBT (Computer Baset Test) method according to Bridgman

- a. Teachers can prepare high-quality exam materials. With the help of the internet network, teachers as educators can search for various sources of information related to learning and exam questions on the computer to use as a reference source. Teachers as educators are also able to choose topics that are appropriate and valid for the learning that will be carried out.
- b. The test management process is carried out by default. When taking an exam packaged in computer media, the entire process will be carried out in it, including searching for material, creating questions, user settings, and assigning a score or value to the exam results.
- c. Educators can monitor student motivation. In this case, teachers as educators are able to see students' motivation after learning by comparing scores between individuals and seeing the final results of the exam.

WEAKNESSES OF CBT (COMPUTER BASED TEST)

There is no perfect evaluation system, including this CBT method. Apart from the advantages, this system also has disadvantages. There are shortcomings in using an evaluation system using CBT (Computer Baset Test) media, including:

- a. Students who want to take the exam are required to be able to operate the existing CBT (Computer Baset Test) feature. This is because this exam can only be used through one website. If students are not used to accessing CBT (Computer Baset Test), the processing time can take a long time and there is a big possibility that participants will not be able to answer the questions optimally because they run out of time.
- b. Tools for accessing the CBT (Computer Baset Test), namely laptops or gadgets,

must also be provided or owned by the student or school and be in good condition to support the work on the questions in order to reduce technical problems when taking the test. Network problems are the technical problems that most often occur when CBT (Computer Based Test) is carried out. This is because many students access one website during an exam, so the website often goes down. d. Product Assessment and Self Assessment Product Assessment is a process of assessing skills by making a particular product. Self-assessment is carried out by the students and teachers themselves in the interests of managing teaching and learning activities at the class level. Finally, this type of assessment can also be in the form of attitude assessment and class-based assessment.

CONCLUSION

Based on the results of the implementation of the Intranet for CBT-based assessments, the following conclusions can be drawn: The advantage of using the Intranet for CBT-based assessments, especially for students, is that students do not need to prepare quota for the assessment process, they just need to provide a cellphone or laptop for carrying out the assessment. CBT-based assessment at SMA Negeri 6 Pontianak can produce more accurate test results so that it can minimize human error, reduce time and cost, the results are immediately known to participants, participants are more focused on working on questions because they are written on the exam time, reducing sales of questions caused by questions. leaks and cheating in taking the exam, security is better maintained compared to paper tests which can result in the paper being damaged or torn.

What is an inhibiting factor in implementing CBT in the assessment process at SMA Negeri 6 Pontaianak is the lights going out during the assessment process. If the problem is a power outage, the school has prepared additional days for carrying out the assessment if during the assessment process there are problems with a power outage or the student is sick. So the

school has prepared an additional day at the end of the assessment schedule, usually 1 or 2 days. So that students who are sick can take a supplementary exam on a day determined by the school. Quality schools can of course produce students who can contribute to the country, because education plays a major role in the progress of this country and each individual, therefore innovation is still needed in the education system so that the implementation of future assessments can be even better and students can be comfortable. when carrying it out. As technology users, we should use it wisely. Technology was created to facilitate and speed up human activities in daily life. When we can use it wisely, technology itself can help in various sectors, one of which is education. The presence of an intranet to assist CBT (computer based test) based assessments means both teaching staff and students can carry out the assessment process effectively because of the advantages obtained in carrying out these tests.

SUGGESTION

Based on the conclusions above, the author proposes several suggestions regarding the application of Intranet in implementing CBT (Computer Based Test) based assessments.

1. It is hoped that the central government will implement more intranets in various schools to help students whose parents have lower incomes so that they are not burdened with buying intranet quota for carrying out assessments
2. Schools using intranets for CBT-based assessments are expected to be able to prepare more thoroughly regarding the briefing process during outreach to teachers or students regarding the mechanism for implementing the CBT-based assessments that will be implemented
3. For future researchers to be able to increase the repertoire and enrich empirical information in the assessment process and use of CBT (Computer Based Test).

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