Computer-Based National Assessment Implementation Independently At Jaya 1st State Junior High School Aceh Jaya District, Indonesia

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Abstract. Assessment is an activity to reveal the quality of the process and learning outcomes. Implementation of competency assessment at SMP Negeri 1 Jaya in Aceh Jaya Regency independently since 2020. However, the performance of the first year, the Computer-Based National Assessment, could have run better due to network factors that made it difficult to access the central server. Whereas in 2021, there were also problems with sudden power outages and the internet network weakening, causing a failure in one of the sessions. As well as the readiness of students to answer literacy and numeracy questions which are still constrained by abilities that are still below average based on the 2022 Jaya 1 Public Middle School Education report card, the literacy ability score is 1.83, and the numeracy ability score is 1.72 respectively each of them is still at level 1. These problems become a big picture and challenge, so they become obstacles in implementing independent computer-based national assessments at SMP Negeri 1 Jaya.

Keywords: Implementation; Competency Assessment; High School.

INTRODUCTION

Education is an effort to foster and develop human dignity as a whole, comprehensive, interesting, fun and exhilarating. UNESCO formulates four pillars of education: learning to know, learning to do, learning to be, and living together [1]. These four concepts indicate that education cannot be separated from the individual and life, so individuals as educational products must fully develop themselves and live in a global society [2].

The function and purpose of national education are prepared the next generation of quality and competitive nations. One of the efforts made to achieve educational goals, Nadiem Makarim, as the Minister of Education and Culture of the Republic of Indonesia, launched a new program called "free learning" [3]. One of the decision points for the implementation of the National Examination (UN) ends in 2020, it replaced by a Minimum Competency Assessment (AKM) and a character survey.

Assessment is an activity to reveal the quality of the process and learning outcomes. Assessment is different from evaluation, where evaluation is only oriented to cognitive abilities related to values [4]. The development of a minimum competency assessment is based on a combination of Programme for International Student Assessment (PISA) with Trends in International Mathematics and Science Study (TIMSS) [5]. The studies in this field are [2, 5–9].

The studies above have yet to discuss implementing Competency Assessment at SMP Negeri 1 Jaya, Aceh Jaya District. This study focuses on the implementation of Minimum Competency Assessment one of the schools in Aceh Jaya Regency, which has carried out the National Assessment independently and has become the primary school for schools that have joined since 2020. However, implementing the Computer-Based National Assessment (ANBK), did not work. Maximally due to network factors that are difficult to enter the central server. Whereas in 2021, there will also be obstacles, such as a sudden blackout which causes a failure in one of the

sessions. These problems become a big challenge, a weakness in the computer-based National Assessment system, so a solution is needed to overcome the problem.

METHOD

This study uses qualitative research to describe the results of independently implementing school computer-based competency assessment at SMP Negeri 1 Jaya in Aceh Jaya district. Based on the scope of the research study, the researcher used a qualitative approach to describe an activity or program. Data was collected by observing students' confidence in learning and analyzed with the steps of data reduction, presentation, and verification.

RESULTS AND DISCUSSION

SMP Negeri 1 Jaya is one of the independent and parent schools for other schools in the Jaya sub-district area implementing the 2022 Computer-Based National Competency Assessment in the Jaya sub-district. The number of junior high school level schools in the Jaya sub-district is four public schools and one private school. Out of the five schools, there is one school, SMP Negeri 3 Jaya, which has the status of boarding at SMP Negeri 1 Jaya. This is caused by the availability of ICT and Internet facilities for schools, distances related to the zoning system, time for evaluation, costs required, and locations far from Internet access, which are obstacles for other schools that join. In this case, SMP Negeri 1 Jaya has also made efforts to prepare facilities and infrastructure to the maximum to prepare for implementing a computer-based national competency assessment per the 2022 POS ANBK standard. Schematics of implementing planning, implementing and evaluating and reporting for academic units, such as data collection, participant synchronization, implementation (simulation, rehearsal, implementation) monitoring, evaluation, and reporting of the results of the competency assessment implementation, have been running as they should.

The Minimum Competency Assessment consists of three parts: 1) Competency Assessment, 2) Character Survey, 3) Learning Environment Survey.

Competency assessment made in the form of reading literacy and numeracy literacy. The im-

plementation of this policy is a sign of a paradigm shift in educational evaluation and an improvement in the education evaluation system. The main objective is to encourage improving learning quality and student learning outcomes.

In the preparatory stage, the educational institution that organizes this evaluation sys-tem must prepare adequate infrastructure before carrying out the competency assessment program. This is because competency assessment requires modern facilities and infrastructure, such as computers and networks and expert operators in its implementation. The computer criteria server and client have been determined so that the implementation process can be by the plan. It contrasts two models of carrying out a competency assessment as an alternative, which is done by considering the situation and infrastructure owned by the school carrying out the competency assessment [10].

The semi-online mode requires equipment, namely:

1) PC, tower, desktop or laptop with a size minimal 11 Inch;

2) Processor 4 core and clock rate minimal 1.6 GHz (64 bit);

3) RAM 16 GB, DDR 3;

4) Hard Disk 250 GB;

5) Windows System: Windows 8 / Windows 7 / Linux Ubuntu 14.04, Chrome-OS (64 bit);

6) Web Browser: Exambro Client;

7) Internet network with bandwidth minimum 1 Mbps;

8) local area network (Local Area Network – AND) with switch 10/100/1000 Mbps and count port according to the number of computers on each server;

9) Every computer should have a control Alone;

10) LAN CARD (NIC) 2 units support GB;

11) UPS (15 minutes minimum resistance);

12) The number of servers follows the ratio of 1:40 (1 server is the maximum for 40 clients);

13) Have at least one server backup (10%).

The online mode requires equipment, namely:

1) Computer client: 2 GB memory, 1024x720 resolution, windows 7 and above or Chrome-OS;

2) PC or laptop with a size minimal 11 Inch;

3) Processor minimal single core;

4) RAM minimal 2 GB;

5) Windows System: Windows XP / Windows 7 / Windows 8 / Linux / MAC / Chrome-OS (64 bit);

6) Web Browser: Exambro Client;

7) Hard Disk with a minimum storage capacity of 10 GB (free space);

8) Internet network 12 Mbps for 15 clients;

9) Computer-based AKM implementation is exemplary online and semi-online.

This choice is appropriate because the number of target students in all SD, SMP, and SMA/SMK is quite significant in quantity. According to the primary education data of the Directorate General of Early Childhood Education, Elementary and Secondary Education at the elementary level, there were 149,137 schools and 24,721,326 students, junior high schools 40,599 schools and 9,886,064 students, high school 13,897 schools and 4,842,477 students and vocational high school 14,211 schools and 5,031,846 students [11].

The schedule for carrying out the national assessment for students in 2022 by the National Assessment Center starts from synchronization, simulation, rehearsal and implementation from July 29 to September 4, 2022.

Competency assessment is an essential competency assessment or evaluation system needed by all students to develop their capacity and participate positively in the community environment. In this case, two fundamental competencies are measured using competency assessment: reading literacy and mathematical/numeration literacy.

The implementation of literacy and numeracy competency assessment is competency-oriented, which includes logical-systematic thinking skills, reasoning skills, skills in using learned concepts and knowledge, and skills in sorting and processing information. In this case, the competency assessment presents problems in various contexts with the aim that students can solve problems using their reading literacy and numeracy competencies. In short, competency assessment is intended to measure competency in depth and not only limited to mastering basic concepts [10].

Competency assessment acts as an evaluation system nowadays involving the assessment of essential competencies related to students' skills. Two competencies are measured in the competency assessment, namely literacy and numeracy competencies, which can be viewed from three aspects. The aspects include content, cognitive processes, and context. In this context, competency assessment questions consist of multiple choice, complex multiple-choice, matchmaking, brief entries, and descriptions.

The purpose of competency assessment is carried out to assess student competence through complex evaluation activities according to predetermined criteria. Simultaneously, the results of competency evaluation and assessment are also designed to provide information about the level of student competency. Subject teachers can then use this competency level to develop effective and quality learning strategies according to student achievement levels. Thus, "Teaching at the right level" is applicable. In this context, competency assessment also influences the design of subsequent learning systems by taking into account the level of student achievement so that it will make it easier for students to master lesson content and can achieve the expected competencies in subjects [10].

The evaluation component in the competency assessment consists of content, cognitive level, and context with the following details.

Table 1 – Components of the Minimum Competency Assessment [10]

Aspect	Literacy	Numbering
Content	Literary/Fictional Texts and Informational Texts	Numbers, Algebra, Geometry and Measurement, Data and Uncertainty
Cognitive levels	Find information Interpret and integrate Evaluate and reflect	Understanding Application reasoning
Context	Personal, Socio-Cultural, Scientific	Personal, Socio-Cultural, Scientific

After going through the evaluation implementation phase, competency assessment results will be obtained based on the competency assessment components. Categories of student competency achievement based on the results of the Reading Literacy and Numeracy competency assessment are grouped:

a) Need for Special Intervention if students only have limited knowledge, do not understand basic concepts, and cannot yet make interpretations of the problems given;

b) Basic, if students already have basic knowledge and concepts, understand the problems given, can make simple interpretations, and can solve simple problems;

c) Proficient, if students can apply their basic knowledge and concepts in various contexts, can make interpretations of implicit information, solve more complex problems, and can make conclusions;

d) Proficient if students can integrate several concepts to solve problems and can reason to solve complex and non-routine situations.

The information and data generated in the 2022 SMP Negeri 1 Jaya Education Report Card report, obtained an average student literacy score as well as the percentage of students who have a minimum reading literacy level, namely the Advanced category 6.67%, Proficient 51.11%, Elementary 37.78 and need intervention 4.41%. Meanwhile, from the Numerical competency assessment, the average student numeracy score and the percentage of students with a minimum numeracy level are Advanced 5.56%, Proficient 27.78%, Elementary 66.67% and 0% need intervention. Each of them is still at level 1. The information generated from the character survey is the average student character index which describes six aspects of the Pancasila student profile, namely: a) faith and piety to God Almighty and morality glorious; b) global diversity; c) work together; d) independent; e) critical reasoning; f) creative as a whole is at the score of 2.

The information generated from the Learning Environment Survey is an education unit index for a climate of security, an index of inclusiveness and diversity, and an index of the quality of learning. The report on the competency assessment results is part of the material for compiling an evaluation of the education system at the education unit and/or regional (provincial/district/city) level.

ANBK will be implemented in 2021 in all schools, madrasas, and equality education programs. For the secondary education level, students who undergo an assessment will be selected by the Ministry of Education and Culture with a maximum of 45 students and five reserve persons. The sample of students participating in this national assessment will be randomly selected, while the teachers and principals will participate. More specifically, a competency assessment is carried out to measure students' reading literacy and numeracy [11].

Reading literacy is defined as the ability to understand, use, evaluate, and reflect on various types of written texts to develop individual capacities as citizens of Indonesia and citizens of the world and to be able to contribute productively to society. In addition, there is also numeracy literacy, which refers to the ability to think using mathematical concepts, procedures, facts and tools to solve everyday problems in various contexts relevant to individuals as citizens of Indonesia and the world.

The National Assessment is an assessment of the fundamental competencies needed by all students to develop their capacities and participate positively in society. Therefore, two essential competencies are measured in the form of reading literacy and mathematical literacy (numeration). In this context, in reading literacy and numeracy, the competencies assessed include logical and systematic thinking skills, reasoning skills using learned concepts and knowledge, and skills in sorting and processing information [10]. The competency assessment provides instruments in various contexts, which are expected to be completed by students using their literacy and numeracy competencies.

The implementation of competency assessment has two types of implementation options: systematically online and semi-online. Performance in educational institutions, for academic units that do not have bandwidth internet, is adequate, and you can choose the mode semi-online [8]. Education units that carry out competency assessments must implement health protocols before and during implementation because this program was launched during the Covid-19 pandemic.

Implementation of competency assessment requires adequate information and communication technology (ICT). Internet facilities are a challenge for schools that need computer laboratory infrastructure. In reality, many schools need more facilities to carry out competency assessments. One of the solutions for schools that do not have facilities is to work with other schools that have adequate ICT facilities [9].

In addition, technical constraints include the server becoming slow, the client computer suddenly experiencing log-off by himself, and the emergence of viruses and pop-up browsers, which often appear on work screens [6]. Based on this, technicians, proctors, and supervisors who are competent in this field really need it. The facilities, infrastructure, and technicians must have prepared an excellent place, equipment and network while guiding and maintaining the smooth process of working on questions in the competency assessment system is the task of the proctor and supervisor.

The implementation of competency assessment is an evaluation from the government to assess the quality of education services in academic units to improve the quality of student learning on an ongoing basis [10]. This is also supported by the ANBK Standard Operating Procedure (POS) 030/H/Pg.00/2021. Concerning Standard Operational Procedures for implementing the 2021 National Assessment, outlined in Chapter 1 concerning National Assessment participation. Based on these regulations, several criteria must be considered in measuring the readiness to carry out the National Assessment, which consists of several scopes, namely the scope of the academic unit, the size of the assessment participants, the requirements of students, the criteria for unit heads, the selection of students, and the registration of participants [12].

CONCLUSIONS

Based on the research results, the computer-based national assessment is an activity to reveal the quality, quality, process and learning outcomes. However, in the first year's performance, the Computer-Based National Assessment did not run optimally due to network factors that made it difficult to enter the central server. In 2021, there were also be problems with sudden power outages and the internet network weakening, causing a failure in one of the sessions. As well as the readiness of students to answer literacy and numeracy questions which are still constrained by abilities that are still below average based on the 2022 Jaya 1 Public Middle School Education report card, the achievement score for literacy ability is 1.83, and the numeracy ability score is 1.72 which is in level 1. These problems become a big challenge as obstacles in the computer-based national assessment system at SMP Negeri 1 Jaya, Aceh Jaya district.

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