



Students' Conception of Computer-Based National Exams in the Context of Sociocultural Context in Indonesia

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ABSTRACT

Educational assessment is an important tool for evaluating the effectiveness of educational systems, institutions, and programs. It provides insights into student learning outcomes and informs the improvement of teaching and learning practices. The computer-based National Assessment (ANBK) is a nationally standardized assessment in Indonesia that utilizes computer technology to measure students' abilities in various subjects. The problems faced by students during the implementation of ANBK are their lack of familiarity with the gadgets used for ANBK, the negative general perception of ANBK itself, and the school infrastructure that does not support ANBK. This research aims to propose a model which illustrates Students' Conception of Computer-Based National Exams in the Context of Sociocultural Context in Indonesia. A quantitative approach will be used in this study with a survey research design. Student Conceptions of Assessment (SCoA) student self-report inventory will be used in this study to collect student responses to the Indonesia Computer-Based National Assessment. The results showed that the influence and benefit variables did not have a significant influence on the variables of improving the learning process. The learning process accountability variable does not have a significant influence on the learning process improvement variable.

Keywords: Students' Conception, Computer – based, National Examination, Learning process.

1. INTRODUCTION

Educational assessment is an important tool for evaluating the effectiveness of educational systems, institutions, and programs. It provides insights into student learning outcomes and informs the improvement of teaching and learning practices [1]. [2] adding assessments that serve various purposes such as individual certification, teaching improvement, and evaluation of learning standards. Assessment in the world of education can be classified into several types, including formative, summative, diagnostic, norm reference, and criterion reference [3]; [4]. Educational assessments can be carried out by various methods, such as standardized tests, performance assessments, portfolios, self-assessments, peer assessments, and teacher observations. Standardized tests are commonly used in educational assessments to measure students' knowledge, skills, and abilities [5]. The development of educational assessment leads to the use of computers in assessment. According to [6], computer-based testing is a useful method for teachers to achieve their goals in teaching and testing. This is especially beneficial in

situations where time is limited, and the exam is very important.

The Computer-Based National Assessment (ANBK) is a nationally standardized assessment in Indonesia that utilizes computer technology to measure students' abilities in various subjects. This aims to improve the quality of education in Indonesia by providing a basis for assessing student performance [7]. The ANBK test is held every year for students in grade 6 of elementary school, grade 9 of junior high school, and grade 12 of high school/vocational school. The subjects tested include Mathematics, Indonesian Language, and Science. The ANBK test is conducted simultaneously throughout Indonesia, and the results are used to determine student graduation and the quality of education in a region. ANBK uses computer technology to distribute questions, collect test results, and automatically assess test results. The government assesses that including information and communication technology in the national exam will increase the assessment integrity index. Despite the benefits, ANBK faces challenges such as limited infrastructure and access to technology in some areas and

criticism of the ability of computer technology to measure students' abilities holistically.

Several researchers have investigated computer-based exams from a student's point of view. [8] examined students' perceptions of IbT TOEFL in Iran. He found that the use of computerized exams was considered negative due to constraints on computers and related devices during the exam.

Several researchers have researched national computer-based research in Indonesia. [9] found that the implementation of ANBK has improved the efficiency of the examination process and reduced the time required to process the results. However, the study also found that there are still challenges and problems in the implementation of ANBK, including technical difficulties and connectivity issues, as well as concerns over the security and fairness of the audit. [10] also shared some agreement in terms of favorable perspectives on the implementation of ANBK that emerged due to its effectiveness and efficiency regarding procedures, safety, assessment, and cost reduction. However, they argue that some challenges were also identified, such as technical issues, inadequate computer facilities, and time constraints.

Therefore, this research aims to propose a model which illustrates Students' Conception of Computer-Based National Exams in the Context of Sociocultural Context in Indonesia.

1.1 Objective of the study

The problems faced by students during the implementation of ANBK are their lack of familiarity with the gadgets used for ANBK, the negative general perception of ANBK itself, and the school infrastructure that does not support ANBK. Therefore, this study will objectively explore the perception of school students who have participated in the Computer-Based National Assessment using the Students' Conceptions on Assessment instrument from [11].

1.2 Novelty of the research

Several previous studies have discussed national assessments but from an administrative point of view and from the assessment makers themselves, some of them also focus on the implementation of the ANBK, its strengths and weaknesses [9]; [10]. Also, at the level of primary education or the implementation of ANBK in elementary schools [12]. Very few of them discuss ANBK from the perspective of students. Therefore, this time this study focuses on Indonesia students' conception of Indonesia's Computer-Based National Assessment of Indonesia and its nuances due to sociocultural influences. This research will use the inventory of Student Conception Assessment by Gavin Brown. Concepts are how a person perceives and understands a particular idea or idea. concept. These are formed based on their beliefs,

attitudes, and experiences, and are communicated through language [13]; [14]. Conception helps individuals make sense of complex experiences, such as judgment. People's goals and intentions towards something are reflected in their conception of it [13]. Students' conceptions of assessment have important value for the development of that strong test. Em. Therefore, this research aims to find out students' conceptions of Indonesia's Computer-Based National Assessment and its nuances due to sociocultural influences.

2. METHOD OF THE STUDY

A quantitative approach will be used in this study with a survey research design. Student Conceptions of Assessment (SCoA) student self-report inventory [11] will be used in this study to collect student responses to the Indonesia Computer-Based National Assessment. This study uses a research design that uses questionnaire responses, self-reports, surveys, and exploratory and confirmatory factor analysis. The goal is to identify the conceptions that students have, the relationship between those conceptions, and their correlation with academic outcomes. Three sets of Student Conception Assessment from [11] will be used in this study. Below are the details of the survey.

Purposive sampling will be used for the student sample because this study will only involve Indonesia high school students who have completed the Computer-Based National Exam. Their scores in the Indonesia Computer-Based National Assessment will also be obtained from the Regional Office of the Ministry of Education and Culture. Reducing the sampling size, cluster sampling will be used to select schools and students who will be involved in this study. The Student Conception Assessment Inventory will be shared with students through google forms or as an online questionnaire to improve its practicality.

The study will use a three-step analysis process using self-report survey questionnaire responses and exploratory and confirmatory factor analysis to identify the conceptions students have, their relevance, and their relationship to academic outcomes. The first step involves exploring the internal structure of the item-set through the analysis of *the maximum likelihood* factor with *Oblique rotation* [15], followed by dropping items with poor conformance characteristics to the criteria of items with loads below 0.30, items with cross-loading greater than 0.30 on other factors. The second step will use the analysis of the maximum likelihood confirmatory factor to validate the factor structure of the measurement model, and the third step will analyze the structural relationship to achievement. The study noted that this analysis was most reliable with a sample size greater than 500. CFA is carried out using AMOS software.

Data on student conception was disseminated through a survey conducted online using google forms. 100 respondents filled out the survey, 100 respondents who filled out the survey then filled out the minimum competency assessment in the field of literacy. The survey data was then analyzed using AMOS software.

The initial model can be seen on the figure below

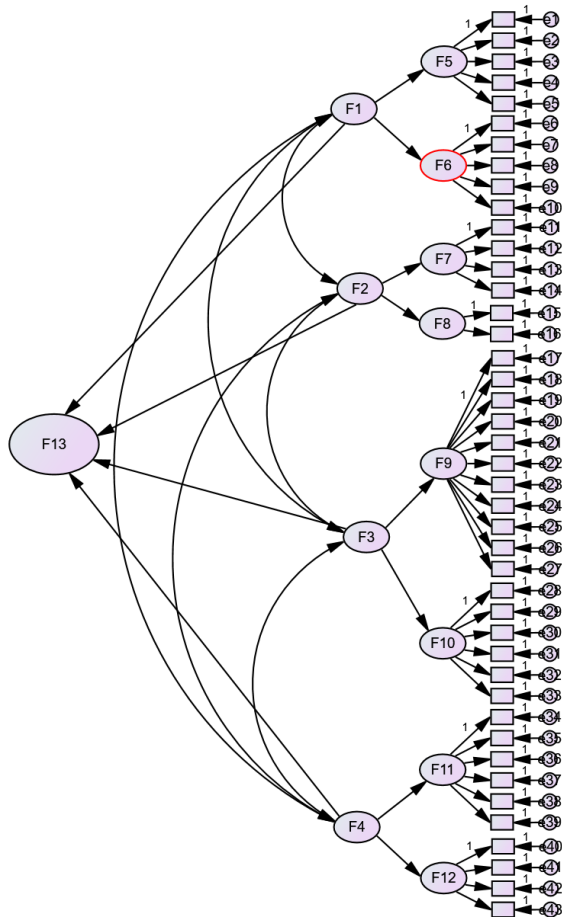


Figure 1 Initial model of Students' Conception on Computer – based exam.

The diagram above consists of

- F1 = accountability for their learning
- F2 = Influence/Benefits of the learning process
- F3 = Improved learning process
- F4 = Not relevant
- F5 = School accountability
- F6 = Student responsibility
- F7 = Classroom environment
- F8 = Personal Pleasure
- F9 = Student improvement
- F10 = Teachers improve learning

- F11 = Bad
- F12 = Ignore
- F13 = Computer-Based National Assessment

3. RESULTS AND DISCUSSION

After obtaining the data, the data were then analyzed using SPSS version 24 and AMOS to build the model and analyze its goodness of fit.

The initial model analysis caused an error, so the researcher revised the model to the following:

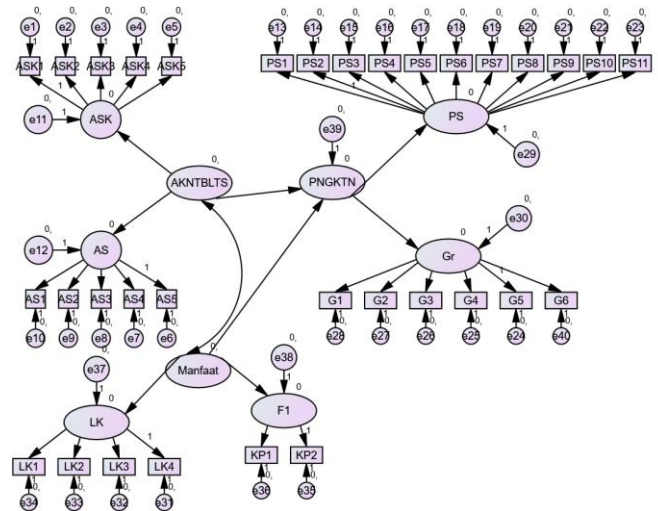


Figure 2 Revised research model of Students' Conception on Computer – based exam

The revised model correlates the Accountability variable and the Benefit variable as an exogenous variable and a Student Improvement variable. Variables of the classroom environment, personal pleasure, and teacher capacity building are eliminated because an error message appears in the form of the matrix is not definite because multicollinearity occurs. The model was then tested again using AMOS software. After being tested using the revised model, the above model does not produce errors but the results of a non-significant correlation between variables. The results of the Estimates regression weights analysis can be seen in the table below:

Table 1. Model Analysis

		Estimate
PNGKTN	<--- Benefit	.277
PNGKTN	<--- AKNTBLTS	-.134
ASK	<--- AKNTBLTS	-.219
AS	<--- AKNTBLTS	.494
PS	<--- PNGKTN	-.036
Gr	<--- PNGKTN	.194
P.	<--- Benefit	.005
F1	<--- Benefit	1.521

		Estimate
ASK1	<--- ASK	1.000
ASK2	<--- ASK	-.012
ASK3	<--- ASK	.024
ASK4	<--- ASK	-.002
ASK5	<--- ASK	-.014
AS5	<--- AS	1.000
AS4	<--- AS	-.003
AS3	<--- AS	.022
AS2	<--- AS	.002
AS1	<--- AS	.021
PS1	<--- PS	1.000
PS2	<--- PS	.925
PS3	<--- PS	-.461
PS4	<--- PS	-.680
PS5	<--- PS	.113
PS6	<--- PS	-1.423
PS7	<--- PS	-.184
PS8	<--- PS	-3.341
PS9	<--- PS	1.591
PS10	<--- PS	1.749
PS11	<--- PS	-.662
G5	<--- Gr	1.000
G4	<--- Gr	.008
G3	<--- Gr	-.012
G2	<--- Gr	-.008
G1	<--- Gr	-.017
PAGE 4	<--- P.	1.000
LK3	<--- P.	.010
PAGE 2	<--- P.	-.025
PAGE 1	<--- P.	.006
KP2	<--- F1	1.000
KP1	<--- F1	.025
G6	<--- Gr	.003

The goodness of fit analysis shows that the chi square value = 3217.117 so it can be concluded that the model has significant discrepancy. The results of the goodness of fit analysis can be seen in the following table:

Table 2. Goodness of fit analysis

Model	NPAR	CMIN
Default model	111	3217.117

CONCLUSION

The conclusions which can be withdrawn from the analysis are as follows:

1. The influence and benefit variables did not have a significant influence on the variables of improving the learning process
2. The learning process accountability variable does not have a significant influence on the learning process improvement variable

3. The goodness of fit analysis shows that the chi square value = 3217.117 so it can be concluded that the model has significant discrepancy.

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