The Evaluation of Participant Satisfaction on National Item Writing Program based on Bloom's Taxonomy Level in SIAP Application

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**Abstrak.** Evaluation described in this paper is the evaluation of item-writing program national level Bloom's taxonomy-based application SIAP. This application was developed by the Center for Educational Assessment, Research, Ministry of Education to help facilitate the writing about a question bank. Writing about the new SIAP-based applications were initiated in 2017. The author questions that have been selected to write about using the application SIAP. Material undertaking as center officials also carry out the revision and reception problems with this application. Problems that have been received is what will be a matter for question bank. During the implementation of which will enter the age of two years, of course, required the evaluation of the effectiveness and efficiency of this application. Internal Puspendik have done so for the first time in early 2018. Questionnaires distributed through SIAP application. The method used is the method of evaluative analysis of quantitative and qualitative data. This evaluation uses Kirkpatrick evaluation model. Population and sample are about the author of the national selection results throughout Indonesia in 2016. The result is the level of satisfaction of the application writer SIAP (84.89% / Good), satisfaction of communication with undertaking Materials (79.35% / Good), and satisfaction with the Admin (68.79 / Pretty Good).

**Keywords:** evaluation, satisfaction levels, writing about, the application SIAP, Kirkpatrick's model
INTRODUCTION

Center for Educational Assessment (Puspendik) is one unit in the Research and Development of the Ministry of Education and Culture of the Republic of Indonesia. Based on Minister of Education and Culture No. 1 In 2012, Puspendik has the task of carrying out the preparation of technical policy, research, and development of systems and educational assessment methodology.

In accordance with its function, Puspendik not only technical policy formulation and methodology development assessment system of education, but also carry out academic measurements, nonacademic, and selection; develop information management systems and educational assessment results; and carry out analysis of educational assessment results, megordinasi, facilitate, and evaluate the implementation of educational assessment.

To realize one of several tasks, namely carrying out academic measurements, Puspendik must produce a valid and reliable instrument. The instrument is one among them is a matter for question bank. Questions were taken from the banks about this of course has undergone some process analysis as an annual cycle.

Formerly, Puspendik question bank development process was performed using manual means. Problem was written by the author using the card format questions that have been provided by Puspendik. Questions been written subsequently typed by a typist part about the script.

After all the questions completed typed, then performed a review or study of the text by a reviewer team consisting of senior teachers Puspendik target. The results of this review is further verified by persons responsible for the material to be analyzed qualitatively. Problems result of verification is what will be tested.

From the test results and quantitative analysis found problems with good quality, being even worse. Problem is of poor quality do revision back to be accepted into a matter for question bank. Problems here's a question bank that will be used for various purposes, one of which is the National Exam.

Along with the times, Puspendik under the Field Assessment of Academic innovation-based item bank development applications. This application is known as the SIAP (Innovative System Application Assessment). This application was designed and developed based on the idea that the national examination (UN) has been gradually implemented using CBT (Computer Base Test). Only a few areas in Indonesia are still using (PBT) Paper Base Test. It is pushing the field of Academic Assessment, as a field that is responsible for the grains national exam, to innovate in order-writing process, review items, verification, the input to the computer-based question bank. Later, the withdrawal of questions about the bank's national exam items just do the "calling" based on program codes only.

SIAP ready for use in mid 2017. This application is immediately used when writing about the national program conducted by Puspendik in July 2017. This application is also used when the candidate selection item writer. Candidates who register and obtain user login and password into the application and accept the task of writing a number of questions based on the indicators that have been set by the person in charge of the material. Problem was written and sent using SIAP application. The party responsible for the material has already started using the application SIAP to make the selection of items written candidates-writing program. This process takes place strictly in order to get a candidate who would later become a writer partnered matter Puspendik question bank.

To that end, the field of educational assessment periodically conducts writing about the national level. In recent years, the implementation of the procedure-writing program to get additional step, namely the stage of academic selection. This is done to further enhance the level of reliability and validity of candidates for the item writers to produce quality problems. Teachers who pass this selection of eligible national-writing program carried out in several stages.

Some time ago, Puspendik conduct an internal evaluation of the national question exercising their writing using a questionnaire entitled "Assessing Services Questionnaire Item Problem through Innovative System Application Rate (SIAP)".

At the beginning of the questionnaire page written statement that the questionnaire was made in order to improve the capabilities of SIAP in providing information technology services to users, particularly authors, reviewers, and the person in charge of the material. Identity is provided on a part of this questionnaire include: field service users (Field of Academic Assessment, Puspendik), the respondent's name, age, institution / educational unit, role in the activities (the reviewers, a verifier), and eight questions.

Eight questions with regard to the level of satisfaction with the service SIAP, the sharing menu and facilities, insertion of images and formulas, the service local area network (LAN), service Helpdesk, advantages and disadvantages of writing about application-based SIAP, and closed with the request advice on the services SIAP forward.

There are two types of responses provided in this questionnaire, the answers Yes / No and the gradation levels of approval (five Likert scale). Furthermore, the questionnaire circulated to the author about the pages through Puspendik SIAP. After the questionnaire is filled, responsible activity analysis.

On this occasion the author will elaborate on the evaluation of the National Problem writing applications based Innovative Systems Application Rate (SIAP), which focused on the reaction phase, the level of satisfaction of trainees through the formative stages of evaluation with reference to the
Kirkpatrick model evaluation (Kirkpatrick and Kirkpatrick, 2009)

THEORITICAL STUDIES
Evaluation Concept
Evaluation referred to in this study refers to the notion of evaluation by Anderson (Krathwohl nd) the process of determining the results achieved several activities planned to promote the goals. In other words Mutofín use the term monitoring, namely business and describe and explain the implementation of the program. This monitoring will generate designative claims about the implementation of the program in the past or at present.

Referring to the context of the implementation of the program, the category in question is the successful implementation and the items considered are the result or the process itself in an effort to determine the decision. Evaluation can be used as inspection program related to the context of the achievement of the program with the decision whether next program, delayed, improved, developed, accepted, or rejected.

Furthermore, Arikunto argue that the program is a series of activities to be undertaken to achieve certain goals. The activities in question are activities that are planned in advance. Activities that have been completed no longer a program.

Understanding Writing Program Problem
Writing about is an annual event conducted by the Center for Educational Assessment to meet the availability problems in a question bank. During this time, writing about is still paper-based. That is, from the start-writing, revising, and writing back, all using question cards that have been provided by Puspendik format. This is certainly spending a lot of budget, time consuming, and ineffective.

Writing program is given to teachers who are located throughout Indonesia and meet the requirements. Quoted from page Puspendik, The requirements to become a participant of national-writing is as follows.

a. Strong desire to be a writer matter.
b. Able to work under pressure.
c. Committed and integrity to maintain confidentiality.
d. Able to operate computer minimal Ms. Office.
e. Old as high as 45 years in December 2017.
f. Educated minimal S1 line with the subject of teaching.
g. Has support subjects related field of study at least 5 years.
h. Not affiliated with tutoring.
i. Obtain written permission from the principal.
j. Pass the administration and academic selection.

Bloom’s Taxonomy
In the process, David R. Krathwohl, pupil Bloom, make revisions to Bloom’s Taxonomy. It works together with seven experts psycho-education, and education (Anderson et al., 2001), They do a revision of some things.

First, replace the term knowledge to remember, the term comprehension and sintesys be understand and create. Second, changes in taxonomy, namely replacing the previous highest position taxonomy is the evaluation be create.

Understanding SIAP Applications
READY is an acronym for Innovative System Application Ratings. This new application in 2017. READY socialized aims to facilitate the process of writing about, the revision questions and test questions. Problems that have been written, revised, and tested automatic entry into the server. This application allows the recall problems because it has been grouped based on indicators, KD, and its own curriculum.

Through this application, the item writers will easily accept suggestions about the improvements delivered by the technical team of Puspendik as the party responsible for the material. They also will be easier to revise and resubmit the questions that have been revised to undertaking the material to be analyzed back.

National-writing programs using the application SIAP (quoted from page Puspendik) Is implemented with the following steps.

1. The training participants wrote about using the card format questions that have been given in softcopy.
2. Afterwards, participants were asked to write gratings and indicators of a number of items that have been determined.
3. The grille and indicators that have been written, the next in-crosscheck with other allied trainees.
4. Participants write about based on the indicators contained in the lattice.
5. Participants presented the questions that have been written to get input from other participants under the direction of the speaker.
6. Participants open READY application using the email and password that has been given by Puspendik.
7. The participants wrote about the appropriate indicators that have been raised in the application SIAP.
8. Person in charge of the material (in this case the technical staff Puspendik) examining the work of the participants also use the application SIAP. Problem was good, according to the indicators and the rules-writing, immediately accepted and assessed by an asterisk. The more stars who obtained the item writers, the quality is also a matter of what is written. Problem is not good material returned by the undertaking to the author about to be revised. And so on.
Kirkpatrick Model

This evaluation model is a model that is often used for training programs or training for a short time (Kirkpatrick). He describes this model with four stages of evaluation, namely reaction, learning, behavior, and result.

Stage reaction is to evaluate the trainee means to measure participant satisfaction. Widoyoko outlines satisfaction is measured starting from the satisfaction of a given material, which is used learning instructors strategy, learning media, training schedule, until consumption during training. If the training is effective, participants were accommodated in training. This measurement is important to get feedback and benchmarks in conducting the evaluation. Measurements were made using a questionnaire containing questions 15-25.

Learning phase, participants said on her learn if there has been a change of attitude, improvement of knowledge, and skills upgrading. These levels determine the extent of absorption of the participants in the training program course the materials provided and can determine the impact of the training program that has been followed. Measurements were made by comparing the results of the pretest to posttest results of the participants.

Phase behavior (outcome) is focused on the valuation change of attitude occurred during the training activity so that more internal, whereas behavioral assessment focused on behavioral changes after they return to the workplace.

Stage result (impact) is a long-term evaluation of the performance of the institution resulting from the performance of members of the organization are trained. Evaluation can be done three to four years after the training. This phase is intended to measure the impact of training on working groups or the entire organization.

METHODS

The place of this research is at the Center for Educational Assessment (Puspendik), Ministry of Education and Culture in Gunung Sahari Raya Number 4 Jakarta. When the study was from February to July 2018, writing program to be evaluated is a matter of writing done in the province of Jakarta, Bogor, Depok and Bekasi.

The approach used in this study is qualitative. The method used is evaluative (Sukmadinata) with data collection instruments such as questionnaires and documents to see the achievement of program evaluation.

Data analysis technique used is descriptive analysis of quantitative and qualitative data. Analyzes were performed by describing and interpreting the data from the indicator reaction. Quantitative data through statistical data in the form of frequency tables and percentages obtained.

Step-by-step quantitative data analysis is done by: (1) scoring respondents, (2) the sum total of the overall score, (3) grouped by level of propensity score.

The scale used in this study is the scale of 5 (five) answer options. The ultimate answer is marked with a score of 5 and the lowest response was given a score of 1. Scores of respondents is to be searched mean (M), the mean ideal (Mi) mode (Mo), median (Me), and standard deviation (Sb), and standard deviation ideal (Sbi), the maximum score, minimum score, and the ideal range (Matdoan) to determine the likely responses.

Instead, a qualitative analysis steps done by giving the interpretation of statistical data that has been analyzed previously. This interpretation is done in an objective and candid in descriptive form.

RESULTS AND DISCUSSION

After conducting an analysis of a questionnaire distributed to the author of the national question regarding the use of applications SIAP obtained as follows.

It took a long time to access the application SIAP. For questions regarding the time required to access the application SIAP, as much as 35.93% (ie 106 respondents) replied takes a long time and 64.06% (189 respondents) who answer did not take long.

Details of the required time is as follows.

| Table 1. Details Time to Open Application SIAP |
| No. | Information | Percentage |
|----|-------------|------------|
| 1  | Opens indicator | 8.48% |
| 2  | Writing about in editor | 42.45% |
| 3  | uploading pictures | 49.05% |
| 4  | Creating tables | 55.65% |
| 5  | save about | 18.86% |
| 6  | submit questions | 11.31% |

SIAP application has interactive features

For questions regarding the application SIAP has interactive features, as much as 66.97% of respondents agree and 6.59% answered do not agree. SIAP application interactivity can be itemized as follows.

| Table 2. Application Details SIAP has interactive features |
| No. | Information | Percentage |
|----|-------------|------------|
| 1  | Readable in SIAP apps | 90.55% |
| 2  | Naming the labels easy to understand | 77.35% |
| 3  | Ease of use application SIAP | 71.69% |
| 4  | attractive design | 70.74% |
| 5  | innovative applications | 87.72% |
| 6  | completeness feature | 57.54% |
| 7  | SIAP menu in the application is easy to use | 57.53% |
| 8  | Ease of writing the symbol equation | 21.69% |
| 9  | Ease of inserting images | 37.73% |
| 10 | Ease of use foreign languages | 42.44% |
| 11 | Ease of set layout problem | 50% |
Very happy to use the SIAP application

In general, participants writing about Bloom's taxonomy-based national level to respond glad SIAP applications, as evidenced by the percentage of 84.89%.

Communication with PJM (Person in Charge of Materi)

SIAP application provides the opportunity for the item writers to communicate with the party responsible for material through Chat features. However, there are some participants who did not use those facilities. Here's the data.

| Answer options | Number of Respondents | Percentage |
|----------------|-----------------------|------------|
| Yes            | 200                   | 47.96%     |
| Not            | 92                    | 21.82%     |
| Abstain        | 3                     | 30.21%     |

There is also the level of satisfaction in communicating with the author about undertaking Content description can be seen in the following table.

| No. | Information                  | Percentage |
|-----|------------------------------|------------|
| 1   | Explanation indicators       | 72.50%     |
| 2   | Explanation comments repair  | 83.00%     |
| 3   | Explanation rejected         | 82.55%     |

In general, participants felt writing about communication forums that have been provided as a facility to communicate with the undertaking Matter is good (79.35%).

Communication by admin SIAP

In addition to providing facilities to communicate with the party responsible for material, SIAP application also provides the facility to communicate with the Admin SIAP. Of the 295 respondents who completed questionnaires, 266 (90.16%) using this facility. They feel satisfied and helped with the communication open with admin, either through the Call Center (69.19%), Whatsapp (96.98%), and email (40.22%). The average level of satisfaction with Admin is 68.79%.

From the description of the level of participant satisfaction based national-writing READY application can be said that in general the participants felt satisfied to use SIAP applications, both satisfaction with the application itself, by undertaking communication materials, as well as communication with the admin.

However, there are interesting things were found, namely inconsistencies participants to fill out a questionnaire. Those who answered Not for questions about the long time to access the application, by undertaking Komuikasi materials, and communication with the admin, they STILL NOT answer questions that it shall be their responsibility.

Of the 189 participants who answered No to question a long time to access applications, 86 people (45.50%) took answered; 30 of 92 (32.60%) of the participants to the question by undertaking Komuikasi material, and 3 out of 4 (75%) answered to questions of participants join the communication with the admin.

The data indicates that there are some things that need to be improved by undertaking activities based National Problem Writing SIAP applications, namely the validity and reliability of the instrument (questionnaire) to be used. Preferably, the questionnaire used (web-based) is equipped with premises automated features that will close the current selection of respondents answering follow-up questions not.

Moreover, the improvement of the formulation of the question needs to be done so that the respondents do not feel confused to answer, for example, to the question I am happy to use the application SIAP; menu-writing is very difficult to use; SIAP feature is complete, it can be replaced with the satisfaction of the application (not satisfied, fairly satisfied, satisfied, very satisfied); use the application menu (hard, quite tough, easy), and the completeness of features SIAP (incomplete, quite full, full).

CONCLUSION

After analyzing the response of participants item-writing national level Bloom's taxonomy-based applications SIAP can be concluded that the three aspects are observed, namely the aspects of satisfaction with the application, satisfaction with communication with the party responsible for material, and satisfaction with the admin, each aspect has a level of satisfaction different.

The level of satisfaction with these three aspects are respectively 84.89%, 79.35% and 68.79%. For the aspects of satisfaction with the applications necessary to improve the application service on the insert equation symbols, images, and foreign languages.

For the aspects of responsible communication satisfaction with penangung material is necessary to improve part service indicator explanation. Next, part of e-mail services on aspects of communication with the admin needs to get improved service.

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