The effect of problem development training using Moodle on teacher performance in developing problem test in high school

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Abstract. This study aims to determine the effect of the question preparation training using Moodle on teacher performance in preparing test items in high school. This study uses the survey method (field study) using the correlational approach. Methods of data collection using questionnaires and documentation. Based on the results of testing the data that has been done, it was found that the hypothesis testing obtained a decision that there was a positive and significant relationship between the Training of Question Making and Teacher Performance in Developing Test Questions in High School. Calculation of data normality test, obtained results for instrument data on teacher performance with $L_{count} = 0.138$ and training instrument data preparation for $L_{count} = 0.141$ with $L_{table} = 0.146$. That is, data from both instruments are normally distributed. As for the results of testing the hypothesis obtained a value of $0.735$. That is, the correlation between the x variable and the y variable is strong. These data indicate that there is a positive relationship between the training of question making using Moodle and teacher performance in compiling test questions in high school.

1. Introduction

Teacher competence is the ability of a teacher to carry out learning tasks and be responsible for students. Teacher competency in learning becomes the most important part in supporting the creation of an effective learning process. Moodle (Modular Object-Oriented Dynamic Learning Environment) is one type of information technology-based e-learning that uses open source in the form of websites that are used in the learning process to obtain very broad information. Through Moodle learning material can be accessed anytime and from anywhere [1]. The use of Moodle in learning helps teachers to create interactive learning media. Interactive learning media can increase student learning interest in the subjects given by the teacher. Based on the results of observations and interviews with Ms. Alfia Susan as the deputy head of the curriculum in SMAN 100 Jakarta, information was obtained that the low performance of teachers in preparing questions can be seen from the use of existing tests and then adjusted to teaching materials. Most of the teachers in compiling the questions are not in accordance with the rules of writing questions, for example the selection of inappropriate material, the construction of questions has not been clearly formulated and the use of language is not appropriate. In compiling the questions, the teacher should follow the rules for writing questions that have been set by the Ministry of Education and Culture. In doing the preparation of questions for students, the teacher still uses conventional methods where there is no information technology-based media that supports the preparation of the questions the teacher has made. The lack of teacher knowledge on Moodle-based learning media information technology is due to the absence of training for teachers in using Moodle in
the preparation of questions. Training for teachers is very important in improving the performance of teachers themselves in compiling technology-based questions and the use of technology as learning media. Therefore, it is necessary to conduct training for teachers at SMAN 100 Jakarta.

According to Barnawi and Arifin teacher training can be used to deal with the teacher's poor ability [2]. The training program will be provided based on the needs of the teacher in the school so that the type of training to be used must be programmed in advance and in accordance with the teacher's ability which is still low. Teacher training will be more efficient if it is designed according to the needs, implementation times, and methods to be used. According to Zainal Arifin, a test is a technique used in order to carry out measurement activities in which there are various questions, or a series of tasks that must be done or answered by students to measure the behavioral aspects of students [3]. According to Sugiyono a test can be said to be good as a measuring device must meet the test requirements, namely having validity, reliability, objectivity, practicality and economics [4].

2. Methodology
This study uses field studies as a methodology with a correlational approach. The study sample was all 37 people from the data source. This study also uses questionnaires and documentation as research instruments. Data collection is done by the following techniques: 1) Observation, 2) Interview, 3) Questionnaire (Questionnaire) and 4) Documentation. By conceptual definition teacher performance is a measure of the teacher's ability level after experiencing a process within a certain period of time. To measure teacher performance can be done based on four competencies possessed, namely pedagogic competence, personality competence, question competence and professional competence.

2.1. Testing instrument validity
Giving scores on the answers of each item is processed using the Content Validity Ratio (CVR) formula as follows:

\[
\text{CVR} = \frac{(N_e - (N/2))}{N/2}
\]

\[
\text{CVR} > 0 \rightarrow \text{item about match}
\]

\[
\text{CVR} < 0 \rightarrow \text{item do not match}
\]

2.2. Testing the validity of the question
Question validity is done to determine the accuracy and accuracy of a test according to its measurement function. Question instrument validation is calculated by Biserial Point correlation formula to see the relationship between two variables. Sugiyono [4]

\[
\rho_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}
\]

Furthermore, the items stated in the statement are valid, calculated by Kuder Richardson's formula. The KR-20 formula according to Sugiyono [4], namely:

\[
\rho_{11} = \frac{n}{(n-1)} \left( \frac{s^2 - \sum pq}{s^2} \right)
\]

Data analysis technique, Simple correlation using the Pearson Product Moment formula.

3. Results and discussion
Processing the instrument uses three validators and the results all meet the requirements, then proceed to see instrument validation, with 37 teacher respondents. This instrument is in the form of questions in the form of multiple-choice questions with 2 kinds of multiple choices with a total of 46 questions
consisting of 26 questions for the teacher's performance questions and 20 questions for questions about the question preparation training. Based on the results of the validity test, to test the validity of teacher performance, from 26 items, there are 2 invalid questions, namely: question 5 and question 7. So that 24 questions are used for the study. As for the validity of the question preparation training instrument, from 20 items tested, there is 1 invalid question, namely question 2. So that 19 questions are used for the research.

3.1. Reliability test

After analyzing the validation test, the researcher calculates reliability for 46 questions using the KR-20 formula, the reliability index is 0.803 and the question questions instrument about the question preparation training has a reliability index of 0.813. This number states that the two instruments have high consistency, meaning that the questions made are reliable. Furthermore, researcher used Pearson product moment correlation formula obtained a correlation of 0.735 which means that the correlation between the training in the preparation of questions and teacher performance was quite strong. These data indicate that there is a positive relationship between the training of question making using Moodle and teacher performance in compiling test questions in high school.

3.2. Screen capture of training results

![Figure 1. Moodle start page.](image1)

![Figure 2. Making a teacher account.](image2)
4. Conclusion
Based on the results of the study it was concluded that there was an influence between the Training of Question Making using Moodle and Teacher's Performance in Developing Test Questions. The higher the results of the training in the preparation of questions conducted by the teacher, the higher the results of teacher performance. This can be a consideration because it will affect the learning process in class.

References
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