THE DEVELOPMENT
OF BLENDED LEARNING-BASED SELF-LEARNING
ON CLASSROOM ACTION RESEARCH TRAINING MATERIAL
TO IMPROVE TEACHERS PROFESSIONALISM

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ABSTRACT

Objectives*: The aim of this study is to develop an self-learning model based on the blended learning for classroom action research training materials to improve the professionalism of Junior High School teachers in Pati regency, Central Java.*

Methods*: The study used Research and Development method. It consists of four main step. Tthey are preliminary study, model development stage, model testing stage and dissemination stage. The technique of data collection used in this study were interviews, questionnaires and study documents.The data were analyzed by using interactive data analysis.*

Findings*: The training of classroom action research at school is still focused on the mastery of the material. It has not been followed up by research and there is no supervision from advisors.*

Significance*: the development of this blended learning-based self-learning can improve teachers performance in conducting classroom action research and enhance their ability in compiling the research report.*

Keywords: self-learning, blended learning based learning, PTK, the professionalism of teachers.

1. Introduction

Background: With the publication of the Regulation of the Minister of State for Administrative Reform and Bureaucratic Reform No. 16 / M.PAN / 11/2009 on teachers functional status and its credit, the promotion of teachers must be able to carry out scientific publications or innovative work since teachers *pratama* level from grade III/b to III/c. Before this regulation was made, scientific publications and innovative work is not an absolute requirement for teachers under grade IV/A. One of the activities of scientific publications is classroom action research (CAR). During this time, teachers are not capable in conducting research and preparing the reports.

CAR is a tool to develop the professionalism of teachers, improve the learning process, encourage positive change and lay the foundation of a knowledge-based learning (Mills, 2000; Dawson, 2012; Gall, Gall, & Walter, 2003). If the teachers already have a culture of research, it is expected that they can improve their professionalism.

Although classroom action research is considered useful for teachers development, but this activity has not been implemented yet effectively. It needs an effort to address this problem so that the teachers are able to carry out research. An alternative way to overcome is blended learning-based self-learning. These are some consideration of blended learning-based self-learning: (a) there are still a major number of teachers who have not attended classroom action research training, (b) all schools are equipped with internet network, (c) a development program for teachers such as this can be conducted with a large number of participant, (d) this is one of the development model that supports the realization of self-learning, (e) teachers do not have to leave the classroom so it will not disadvantage the students, (f) it has a flexible model and can be carried out anywhere and anytime, and (g) the interaction between the teachers and facilitators can be conducted through website/ Moodle (Bawaneh, 2011; Joseph, 2011; aging & Senturk, 2010).

2. Statement of Problems:

Based on the above background, this study is focused on the development of teachers capacity, especially their professional competence in conducting classroom action research.

1. What are the steps in developing a blended learning-based self-learning on classroom action research training materials to improve the professionalism of Junior High School teachers in Pati regency?

2. How is the validity of blended learning-based self-learning on classroom action research training materials to improve the professionalism of Junior High School teachers in Pati regency?

3. How effective is the blended learning-based self-learning on classroom action research training materials to improve the professionalism of Junior High School teachers in Pati regency?

3. Research Objectives

The specific objectives of this research and development are as follows:

1. To formulate the steps in developing a blended learning-based self-learning on classroom action research training materials to improve the professionalism of Junior High School teachers in Pati regency.

2. To determine the validity of blended learning-based self-learning on classroom action research training materials to improve the professionalism of Junior High School teachers in Pati regency.

3. To test the effectiveness of blended learning-based self-learning on classroom action research training materials to improve the professionalism of Junior High School teachers in Pati regency.

4. Literature Review

Teaching is a translation of instruction which implies that activities are undertaken to facilitate learning (Reigeluth and Carr-Chellman, 2009: 6). Gagne (in Mayer, 2008: 7) says that teaching is the preparation of an external event to enable and encourage an internal learning process. Thus, according to Mayer (2008: 7) teaching has two components, namely (1) teaching is what teachers do, and (2) the purpose of teaching is to encourage students to learn.

There are some of the terminology associated with self-learning. Mujiman (2006) used the term learning as driven by the motivation of self (self-motivated learning), while Joyoatmojo (2011) used the term self-regulated learning and self-directed learning. The third terminology is different but essentially the same, i.e. independent learning demanded independence in learning.

Self-learning is characterized by: (1) the independence of learners, (2) the autonomy of the management of learners independency, (3) having relevance to a task, (4) portfolio, (5) computer-based learning, (6) learner-based problem solving , (7) independent study, (8) independent evaluation, and (9) the material to be studied (Brown, 2004; Joyoatmojo, 2011; Song & Hill, 2007). The most popular distance learning today is the blended learning-based learning. According to the United States Distance Learning Association and the Hale Group's Report on Distance Learing, more than 96% of colleges and universities now offer this program (aging & Senturk, 2010). Blended learning became famous because of its effectiveness and flexibility in learning process

(Bawaneh 2011; Uzur & Senturk, 2010; Martyn, 2010). Blended Learning is a part of the electronic learning or e-learning, ie learning to use electronic equipment. There are several models of e-learning, such as stand alone course, virtual classroom, learning games and simulation, embedded e-learning, mobile learning, learning and knowledge management blanded (Yusuf, 2010). Blended learning is learning that combines face-to-face activities and a variety of online activities (Bawaneh, 2011). Meanwhile, Uzur &Senturk (2010) stated that the blended learning is learning that combines face-to-face learning and online learning optimally to improve the satisfaction of teachers and learners.

Carr and Kemmis (McNiff, 1991: 2) says *"action research is defined as follows is a form of self-reflective inquiry undertaken by participant (teachers, students, principals, for example) in social (including education situation) in order to improve rationality and justice of (1) their own social or educational practices, (2) their understanding of these practices, and (3) the situation (and institution) in which the practices are carried out."*

Stringer (2007: 1) defines action research is a systematic approach to investigate the cause of people to be able to find solutions for problems faced every day effectively. Action research as a tool that can help individuals in schools, companies, and community organizations increase their effectiveness in the work.

Professionalism is a service that utilizes the knowledge, skills and experience of someone with high standards (Kisinger, 2000; Beaton, 2010). This shows that a person who is deemed to have professionalism are people who have the knowledge, skills and experience that are used to serve others.

Beaton (2010) stated that professionalism is a combination of knowledge, skills, confidence, and character which is more concerned with other people.

5. Significance of Study

Several studies related to the use Moodle-based online learning for students has been done (Nugroho, 2013; Zyaainuri & Marpanji, 2012) but research-related to self-learning for teachers in Moodle-based learning environment is rarely done. The collection of data through questionnaires and interviews will find out the characteristics of self-learning and the difficulties faced by the teachers in conducting classroom action research, other than the feasibility and proper test. It is expected that the findings in this study will assist the supervisor in guiding teachers to conduct research.

6. Research Method

This research is a developmental research. According to Borg and Gall (1983), it is a process used to develop and validate the educational products. Research & development, according to Seels Richery (in Setyosari, 2010) is defined as the systematic study to design, develop and evaluate programs, processes and learning outcomes that meet the criteria of consistency and effectiveness internally. In research and development, there are four main stages, namely (1) the preliminary stage, (2) the model development stage, (3) the model testing stage, and (4) the dissemination stage (Sugiyono, 2009; Gall, Gall & Walter, 2003). In a preliminary study, evaluating the results of the

training has been carried out, then creating development of the initial draft of the model. After that, the product is validated by experts and then there are the first model test and the second model test. Finally, there is a test for the effectiveness of the model to determine the effectiveness of the models that have been developed.

Data Analysis: the data were analyzed using quantitative and qualitative methods and data collection used questionnaires, interviews and document study.

7. Results

The results of the study will answer the problem formulation that has been determined prior to the study. The following are the results of the research :

7.1 The steps of developing blended learning-based self-learning

This preliminary stage is in a form of exploratory study to gain a deeper picture of the classroom action research training model that has been implemented. The purpose of this stage is to describe and explain the implementation of the classroom action research, among others, describe the implementation of classroom action research in schools, problems faced by teachers in implementing classroom action research and describe the application of the existing guidance. Having held a literature study and field study and sharing with teachers then formed an self-learning model prototype with blended learning-based. The prototype model is then assessed by the modules expert, classroom action research materials experts and learning model expert. The next stage is the model test for the first model and the second model. The first trial result regarding to the participant response on blended learning-based self-learning (BLBSL) about the learning process which is assessed by four Likert scale shows the answers from 3 subjects out of 216 from 20 statements when compared with the attitude classification, this belongs to a very good one. BLBSL participants response to the execution of the classroom action research were assessed with four Likert scale shows answers from 3 subjects out of 115 from 15 statements when compared with the attitude classification, this belongs to a very good one. BLBSL interview results show that the internet connection is not always reliable, a lot of school work to be done and time management is hard to handle. The assessment results of participants' report on classroom action research in Blended learning-based self-learning training shows that the research subjects who had attended training and have conducted research scored 90.17, the subjects who had attended the training but have never conducted research scored 86.76, and subjects who have not completed the training and have never conducted research scored 85.29.

The second trial results to find out the BLBSL participant's response shows 3 subjects scored 205 out of 20 statements when compared with the attitude classification, this belongs to a very good category. The results of 3 subjects in the study to assess the implementation of classroom action research scored 163 from 15 statements when compared with the attitude classification, this belongs to a strongly agree category. The interview results indicate that the research subjects are still experiencing difficulties in managing time. The classroom action research report assessment results indicate that the research subjects who had attended training and have conducted research scored 91,17, the subjects who had attended the training but have

never conducted research scored 88,96, and subjects who have not completed the training and have never conducted research scored 84.55

7.2 The validation test for blended learning-based self-learning model

The results of the validation tests conducted by experts in information technology and communication with four Likert scale questionnaires to assess blended learning-based self-learning model with Moodle application gets a score of 72 out of 20 statements when compared with the classification, this belongs to a very good category.

7.3 The effectiveness test of blended learning-based self-learning model

The questionnaire results on classroom action research implementation of the experimental group from 6 subjects scored 317out of 15 statements when compared with the classification, this belongs to a strongly agree category. The questionnaire results on classroom action research implementation of the control group from 6 subjects scored 243out of 15 statements when compared with the classification, this belongs to the agree category because the range porition is between 226 to 292.5, so the subject of this study suggests that the implementation of the research goes well.

The assessment results on classroom action research report of the experimental group showed that the research subjects who had attended training and have conducted research scored 93.00, the subjects who had attended the training but have never conducted research scored 90.43, and subjects who have not completed the training and have never conducted research scored 89.3. The average score of the the research subjects is 88.71. To provide further clarity on the research results, the report can be seen in Figure 1, as follows:

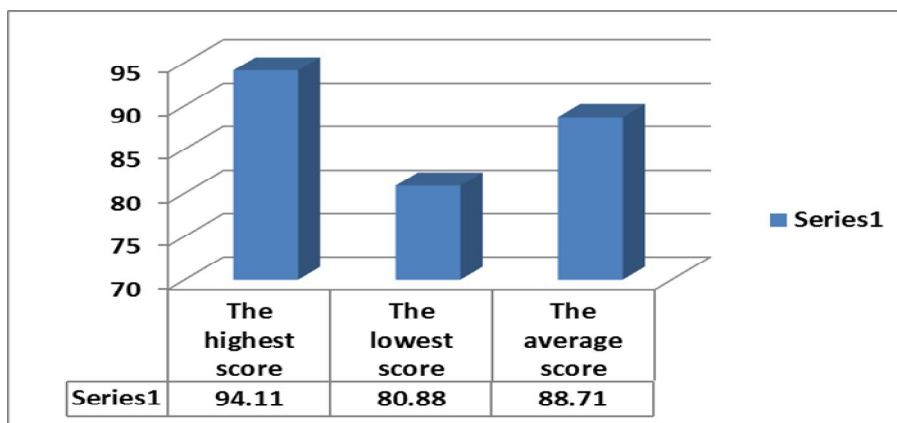| Series1	94.11	80.88	88.71
	The highest score	The lowest score	The average score

Figure 1: The chart for the highest score, lowest score and average score

The assessment results on classroom action research report of the control group shows that the research subjects who had attended training and have conducted research scored 88.90, the subjects who had attended the training but have never conducted research scored 84.51, and subjects who have not completed the training and have never conducted research scored 69.10. The average score of the the research subjects is 80.84. To provide further clarity on the research results, the report can be seen in Figure 2, as follows:
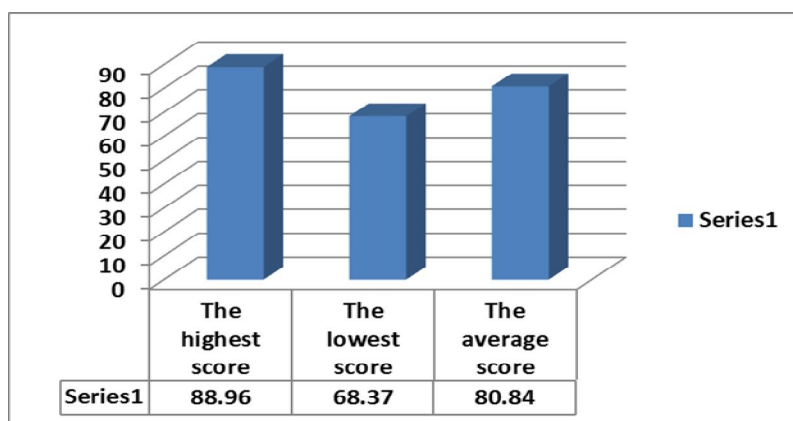
Figure2: The chart for the highest score, lowest score and average score

　　　Processing the pretest and posttest score data of the experimental group and the control group. The purpose of testing the effectiveness of blended learning-based learning model is to determine the improving mastery on classroom action research after being trained in blended learning-based self-learning. The experimental data in this study was processed using SPSS version 17 with the calculation results as follows. If $t_{count} > t_{table}$, it means there is a significant difference. If $t_{count} < t_{table}$, it means the difference was not significant.

Used confidence level of 95% significant level (α) = 100% -95% = 0.05. Testing the two sides, then $\alpha / 2 = 0.05 / 2 = 0.025$. Degrees of freedom (df) = 10

T_{table} ($\alpha / 2$; df) = T_{table} (0, 025, 10) = 2, 228

T_{count} = 2, 630

$T_{count} > T_{table}$ (2,630> 2,228) it means that there is a significant difference between the gain score of the experimental group with the score gained by control group. The average score of the experimental group (= 9.00) greater than the average score of the control group (= 3.416).

　　　From these data we can conclude that the experimental group had an increase of 9.00 while the control group there was an increase of 3.416. These results shows that the t-test, the group that attended the training is more successful than in the group that did not.

8. **Discussion**:

a. Model development stage

The model development stage was carried out through the model test and the effectiveness test of the model, but before that, the product is validated by the experts first. The model developed in this study is the development of a conceptual model by Song and Hill (2007) and the hybrid online model (Martyn, 2003) that combines independent-learning with the context of the environment in the form of blended learning-based self-learning. The learning context of blended learning greatly assist independent learners achieve learning goals other than to motivate to learn (Chou, 2012; aging & Senturk; Keller, 2008). Things that need to be prepared by the research subjects using blended learning is computer skills (Lai, 2011).

b. The validation test of the blended learning-based self-learning model

Validity is the degree of accuracy of the data occurs on the object of research with data reported by the researchers. Briefly valid data is data that is no different from that reported by researchers with real data (Sugiyono, 2011; Gall, Gall & Walter, 2003). This study sought to realize a valid blended learning-based self-learning. In qualitative research, validity is the truth and honesty of a description, inference, explanation, interpretation and all kinds of reports (Alwasilah, 2011). The development of this model in order to be valid based on the description, interpretation and theory.

The blended learning-based self-learning assessment was carried out by experts of information and communication technology (ICT) UNS Surakarta who is familiar with Moodle-based learning applications. The validation of network-based learning that uses Moodle application (Modular Object-Oriented Dynamic Learning Environment) is a software on Learning Management System (LMS).

From questionnaires instrument using Likert scale, the score given by assessors is 72 out of 20 statements when compared with the classification or category of strongly agree or very good because it is located between 66 to 80, in other words it means that the blended learning-based self-learning that uses the application Moodle is feasible and appropriate to use for learning.

c. The effectivenesstest of the blended learning-based self-learning model

In this model test, the model draft that has been tested and validated in model test experts will be used in learning. In the model testing stage the researchers took two groups respectively as the experimental group and the control group. There are three sub-group. The first sub-group is classified as the group that has attended a classroom action research training and has conducted a research. The second sub-group is classified as the group that has attended a classroom action research training and but has never conducted a research. The third sub-group is classified as the group that has never attended classroom action research training nor conducted a research. Before the blended learning process and the training started, both groups were given a pretest and posttest after the completion of the learning to determine the level of effectiveness of the model.

The questionnaire on attitude scale is used to measure the implementation of research and make a report. The report assessment on classroom action research instrument is used to measure the feasibility of a classroom action research report compiled by the research subject. T-test is used to measure the research subjects to the understanding of classroom action research. The responses (from the experimental group) on the implementation of the classroom action research were measured by Likert scale questionnaire was very good. Research subjects who attended the training have high motivation, if the learners have high motivation it means the study results is also high (Keller, 2008; Lai, 2011). There are four features in internet-based learning, they are: (1) the time and place are flexible, (2) indirect social interaction, (3) learning resources are unlimited, and (3) a dynamic learning (Bawaneh, 2011; Chou, 2012; Tsai, 2009). In learning the learner is affected by (1) ICT skills, (2) self-learning, and (3) the affective domain. The

affective domain includes attitudes, motivation and anxiety. In the Tsai's study (2009), he includes motivation as an important element in research.

The response from research subjects (control group) on the implementation of the classroom action research from the calculation of the questionnaire can be concluded that the research subjects in the control group had mastered the concepts of action research well and have the motivation to conduct research and prepare reports.

Results of the classroom action research assessment report (experimental group) shows that the study subjects who had attended the training, did a study in contrast to subjects who have not completed the training and have been carrying out research. Classroom action research training experience is useful for research subjects. Research conducted by Tawalbeh and Al-zuoud (2013) suggests that students who have prior knowledge scored higher than students who did not have early knowledge. Prior knowledge can be acquired through training or reading a book.It is very useful for learners. Research subjects who had attended the classroom action research training have no trouble in following the blended learning-based self-learning.

The pretest and posttest score of experimental group and the control group. From the T test results using SPSS, found out that $T_{count} > T_{table}$ (2,630 > 2,228) means that there is a significant difference between the score of the experimental group with a score of the control group. The average score of the experimental group (= 9.00) greater than the average score of the control group (= 3.416).

From these data we can conclude that the experimental group had an increase of 9.00 while the control group had an increase 3.416. These results show that the t test, the group that attended the training is more successful than the group that did not.

9. Conclusion

The development steps of the model starts with a preliminary study that studies the implementation of learning or training of classroom action research in schools. The next stage is a product development model that started from expert testing to validate the product, and then after a revision of the product, we then implemented model testing. The final stage is to test the effectiveness of the model to determine the level of effectiveness of the model.

Blended learning-based self-learning model validation can be carried out with a model describing what it is, honestly. This can be realized if the model is described in detail. It is to avoid improper interpretation by using of relevant theory. Asking for criticism and comments from others is highly recommended to avoid researcher's bias or improper assumptions and logics of research. Blended learning-based self-learning model is validated by ICT experts from UNS Surakarta.

The effectiveness test of the model is a step to test the effectiveness of the model used in the research. There were two groups, the experimental group and the control group.

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