Advances in Social Science, Education and Humanities Research, volume 591

Proceedings of the 6th Annual International Seminar on Transformative Education and Educational Leadership (AISTEEL 2021)

Development of Training Management Model Based on Information and Communication Technology to Improve ICT Competency Teachers' in SMK Negeri 12 Medan

Fatimasari Nasution[1,*] Irwandi[2] Arif Rahman[3] Achiruddin Siregar[4]

[1] Universitas Negeri Medan, Medan, Indonesia
[2] Universitas Negeri Medan, Medan, Indonesia
[3] Universitas Negeri Medan, Medan, Indonesia
[4] Universitas Negeri Medan, Medan, Indonesia
*Corresponding author. Email: nasutionfatimasari@gmail.com

ABSTRACT

This study aims to (1). Knowing the ICT-based training management process (2). Produce an ICT-based training management model that is effectively used to improve the ICT competence of teachers at SMK Negeri 12 Medan. (3). Knowing the strengths and weaknesses of ICT-based training management in improving the ICT competence of teachers at SMK Negeri 12 Medan. This study uses a Research and Development approach. The test subjects were teachers of SMK Negeri 12 Medan and a team of experts. Types of data in the form of qualitative and quantitative data. The tools to collect data were Likert scale questionnaires, open questionnaires, interviews, pre-test and post-test and observation sheets. The ICT-based training management process consists of planning, organizing, implementing, evaluating and monitoring as well as post-training follow-up. The planning process begins with a training needs analysis. The training is conducted based on a training needs analysis. The ICT-based training management model that the researcher developed consists of planning, organizing, implementing, evaluating and monitoring as well as post-training follow-up, which is better than the previous training management model. From the test results of the implementation of the ICT-based training management model through a limited trial, it showed that there were differences in the results of the pre-test and post-test (increased effectiveness) of the trainees before and after the ICT-based training with the Wilcoxon T-test p (0.00) < 0.005. The advantage of the ICT-based training management model is that the ICT-based training management model is the result of the development of the factual model of training management at SMK Negeri 12 Medan that can effectively improve teachers' ICT competencies. The weakness is that the ICT-based training management model still requires wider testing outside of SMK Negeri 12 Medan. This is due to limited funds, time and the COVID-19 pandemic, so the training is carried out online.

Keywords: Development, Management Model, Training, ICT Competence.

1. INTRODUCTION

Teacher professionalism is a very important factor that determines the success or failure of education. One characteristic of a professional teacher is mastery of the first information and communication technology (ICT). The professional abilities of teachers as regulated in the Law on Teachers and Lecturers Number 14 of 2005 are as follows: (1) mastering the material, structure, concept, and scientific mindset that supports the subjects being taught, (2) mastering the Competency Standards and Basic Competencies of the subjects being taught, (3) developing learning materials that are being taught creatively, (4). Develop professionalism in a sustainable manner by taking reflective actions, (5) Utilizing information and communication technology to develop themselves. The use of information and communication technology (ICT) is very important in the learning process. This provision is contained in the Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 22 of 2016 concerning the Regulation

of the Primary and Secondary Education Process. Chapter 1 of the Ministry of Education and Culture clarifies several learning principles, one of which stipulates the use of ICT to increase the efficiency and effectiveness of learning.

Since March 2020 until now, the country of Indonesia has been hit by the COVID-19 pandemic which has hampered face-to-face learning, especially in the red zone. This situation is also supported by a letter from the North Medan Branch of Education Office No. 421.3/873/CABDIS.MU/XII/2020 which informs that face-to-face learning in 2021 has not been allowed and is still being postponed until an official letter of face-to-face learning is issued from the Governor of North Sumatra Province/Head of Education Office of North Sumatra Province. SMK Negeri 12 Medan is one of the schools located in the branch area of the North Medan Education Office.

The COVID-19 pandemic has had an impact on the world of education, especially in terms of the learning process and improving the quality of teacher and student education. The era of face-to-face learning that has occurred has been replaced by learning online. activities Direct classroom to online learning requires thorough preparation to support the success of increasing the quality of learning in a pandemic era COVID-19. When the world of education has to clean up and move away from the face-to-face learning model, it appears that the educators (teachers) of SMK Negeri 12 Medan are less qualified in the use of ICT (Information and Communication Technology). Based on initial observations, teachers of SMKN 12 Medan still only send materials and assignments via whatsapp group and google classroom in the implementation of learning, and do not provide various learning facilities, making students bored in learning. There are still teachers. who have not been able to use information and communication technology (ICT) in learning, especially in making learning media. Therefore, teachers of SMK Negeri 12 Medan as professionals need to master information and communication technology in order to continue to carry out their functions online, for that training is needed. Training is one of the programs that can be used to improve the knowledge and skills of teachers.

During the Covid-19 pandemic, health protocols must be followed in all activities to prevent the spread of the corona virus 19 through physical and social distancing. Teachers can use the platform Google Classroom at home to improve their ICT skills through information and communication technology-based training. learning Online

is part of the technology-based learning using resources internet, intranet, and extranet (Permana, 2009: 3). Without reducing the nature of the traditional (classical) classroom training model, information and communication technology-based training is expected to accelerate the transfer of knowledge, skills and behavior from teachers who need information technology assistance and are flexible quickly and efficiently.

One of the platforms that can be used online is Google Classroom. which can be accessed via a computer or cell phone making it easier for users. Google classroom is effective in understanding and evaluating the perceptions of teachers and students in the quality teaching and learning process Iftakhar (2016: 12). ICT-based training using google classroom has never been carried out at SMK Negeri 12 Medan, so there are no models and supporting devices. The development of an ICT-based training management model for teachers needs to be developed based on the existing training model. The training that was carried out at SMK Negeri 12 Medan was carried out in Traditional (Classical) classes without using effective and efficient training management, not equipped with structured evaluations, and there was no post-training follow-up. Based on this the authors are interested in conducting research on the Development of Information and Communication Technology (ICT)-based Training Management Models to Improve the ICT Competence of teachers at SMK Negeri 12 Medan.

2. METHOD

This study uses the research method Research and Development (R & D). This research is focused on developing an ICT-based management model to improve teachers' ICT competence.

In this study, for the development of an ICT-based training management model, the author uses the ADDIE development model. The type of data is in the form of qualitative and quantitative data. Quantitative data were obtained from the results of the percentage of needs analysis questionnaires, assessment of the draft training model (questionnaire Likert scale) and the results of pre-test and post-test training. Qualitative data were obtained from answers to open questionnaires regarding teacher interest in ICT-based training and expert and teacher responses to ICT-based training management model products.

To test the effectiveness of the model is to use the research design "One Group Pretest-Posttest design". Wherein O1 is the pre-test (before training) training materials while O2 is the value of the post-test (after training) training materials. Miles & Huberman in Sumaryanto (2007: 106) states that qualitative data analysis uses an interactive model. The interactive model is divided into three stages, namely: (1) data reduction, which is a form of analysis that sharpens, categorizes, directs, discards unnecessary and organizes data in such a way that final conclusions can be drawn and verified, (2) presentation data, a collection of information that is structured and gives the possibility of drawing

conclusions and taking action, (3) drawing conclusions/verification.

3. RESULT AND DISCUSSION

3.1. ICT-Based Training Management Process

The training management process is a process that runs from the beginning to the end of the training. The ICT-based training management process consists of planning, organizing, implementing, evaluating and post-training follow-up stages.

Training management is the activity of optimizing management functions. Training management is needed to organize the training process so that it takes place efficiently and effectively. The ICT-based training management process consists of planning, organizing, implementing, evaluating and following up after training. Each ICT-based training management process is carried out online and complies with the health protocol for the spread of the COVID-19 virus.

Planning begins with an analysis of training needs. Based on the results of observations made to teachers at SMK Negeri 12 Medan about the reality of learning during the covid 19 pandemic, basically teachers at SMK Negeri 12 Medan really need ICT-based training.

In the implementation of training, it is necessary to organize training through the formation of a training management team. The training manager will be responsible for the success of the training. Coordination between the training management team is carried out through WhatsApp Group. The implementation of the training is carried out online, this is in accordance with the Circular (SE) of the Minister of Education and Culture number 04 of 2020 concerning the Implementation of Education Policies in the emergency period of the spread of Corona Virus Disease (Covid-19). In the Circular, the Minister of Education and Culture initiated a Learning from Home (BDR) policy. The evaluation stage is carried out to assess whether the implementation of the training is in accordance with the expected objectives of the training.

The evaluation carried out is in the form of measuring the ability of the training participants to the training material through pre-test and post-test, and evaluation of the implementation of the training. Evaluation of the implementation of the training is carried out through the distribution of instruments to training participants sent via Google Classroom. Aspects evaluated include aspects of appearance, content, application operation, organizer, training process, training methods and resource persons.

3.2. ICT-based Training Management Model

Through interviews with principals and teachers of SMK Negeri 12 Medan and the results of observations, the training management model in SMK Negeri 12 Medan was obtained. The factual model of training management at SMK Negeri 12 Medan is used as the basis for developing an ICT-based training management model at SMK Negeri 12 Medan. The final ICT-based training management model was formulated from the implementation of the results of the online Focus Group Discussion (FGD) and the results of the training evaluation in a limited trial.

Law - Law on Teachers and Lecturers No. 14 of 2005 point 5 states that one indicator of teacher professional competence is that teachers can use information and communication technology to develop themselves. The use of information and communication technology (ICT) is a must in the learning process. This provision is stated in the Regulation of the Minister of Education and Culture of the Republic of Indonesia number 22 of 2016 concerning Standards for Primary and Secondary Education Processes. In Chapter 1 of the Minister of Education and Culture, several learning principles are stated, one of which states the use of ICT to increase the efficiency and effectiveness of learning.

The COVID-19 pandemic has had an impact on the world of education where face-to-face learning has shifted to an online model. Various efforts have been made by the government to prevent the spread of Covid-19. One of the government's efforts is to issue a Circular Letter (SE) of the Minister of Education and Culture number 04 of 2020 concerning the Implementation of Education Policies in the emergency period of the spread of Corona Virus Disease (Covid-19). In the Circular, the Minister of Education and Culture initiated a Learning from Home (BDR) policy. The existence of this policy requires teachers to take the right steps so that online learning runs as well as possible. With the ICT competencies possessed by teachers, it is hoped that teachers can create interesting learning during the pandemic. But the facts show that there are still teachers who have not mastered ICT so that they cannot create varied learning, for this reason, an increase in teacher ICT competence is carried out through online training with the platform Google Classroom. Training can be successful if it is managed by implementing management functions. ICT-based training is managed by developing a training management model that has been carried out at SMK Negeri 12 Medan. The developed ICT-based training management model can be a guide for organizing training, especially those based on ICT. The training can run optimally, effectively and efficiently and can improve the ICT competence of teachers by implementing management functions.
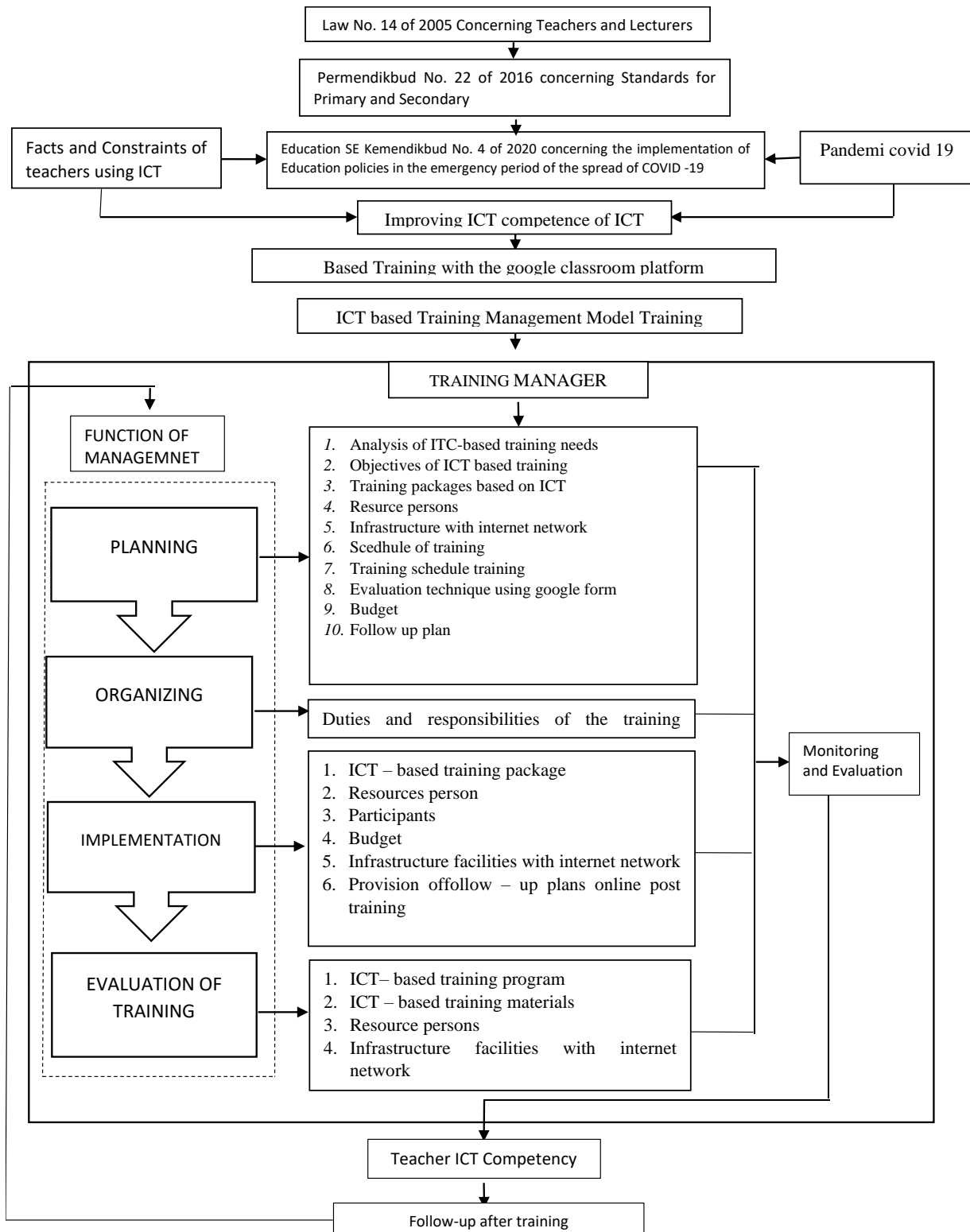
Law No. 14 of 2005 Concerning Teachers and Lecturers

Permendikbud No. 22 of 2016 concerning Standards for Primary and Secondary

Facts and Constraints of teachers using ICT

Education SE Kemendikbud No. 4 of 2020 concerning the implementation of Education policies in the emergency period of the spread of COVID -19

Pandemi covid 19

Improving ICT competence of ICT

Based Training with the google classroom platform

ICT based Training Management Model Training

TRAINING MANAGER

FUNCTION OF MANAGEMNET

PLANNING

ORGANIZING

IMPLEMENTATION

EVALUATION OF TRAINING

1. Analysis of ITC-based training needs
2. Objectives of ICT based training
3. Training packages based on ICT
4. Resurce persons
5. Infrastructure with internet network
6. Scedhule of training
7. Training schedule training
8. Evaluation technique using google form
9. Budget
10. Follow up plan

Duties and responsibilities of the training

1. ICT – based training package
2. Resources person
3. Participants
4. Budget
5. Infrastructure facilities with internet network
6. Provision offollow – up plans online post training

1. ICT– based training program
2. ICT – based training materials
3. Resource persons
4. Infrastructure facilities with internet network

Monitoring and Evaluation

Teacher ICT Competency

Follow-up after training

Figure 1. ICT- Based Training Management Development Model at SMK Negeri 12 Medan

The ICT-based training management model developed is based on Terry's (2003:4) management model with four management functions, namely planning, organizing, implementing, monitoring and evaluating. Based on the findings of the management function of the training implementation at SMK Negeri 12 Medan, it has not evaluated the training program in a structured manner and has not carried out post-training follow-up. The development of the training management model optimizes the findings that have not been carried out at SMK Negeri 12 Medan. The development is carried out by evaluating the training program and post-

training follow-up proved to be able to improve the ICT competence of teachers at SMK Negeri 12 Medan. Improving the ICT competence of teachers after training shows that the ICT-based training management model is easy to implement by ICT-based training managers.

The ICT-based training management model is equipped with a training manual, a guidebook for making learning media and video tutorials for making learning media, which have been validated by experts. The validation results show a very good category. Thus, training manuals, instructional media creation guidebooks and video tutorials for making learning media that have been validated by experts can be used in ICT-based training.

The training manual consists of aspects of introduction, training planning, organization, implementation and evaluation of training. The training manual is a training package that is used as a support in the implementation of training. Notoatmodjo (2009:22) suggests that before conducting education and training, reference materials need to be prepared". The manual and training packages have been compiled by authors according to the objectives and targets of the training. This is in line with Hamalik (2000: 36) who stated that the training material package pays attention to the factors of the training objectives, the level of the training participants and the duration of the training. Training manuals, instructional media creation guidebooks and video tutorials for making learning media that have been validated by experts are distributed to training participants through Google Classroom as the platform used in the training.

The ICT-based training management model guidebook has been validated by management experts and practitioners. The results of the expert assessment obtained an overall average of 3.79. These results indicate that the training management model guidebook is in the very good category. Thus the ICT-based training management model guidebook can be used in ICT-based training at SMK Negeri 12 Medan.

The training material is one of the training packages that help participants in carrying out the training. Hardjana (2001:37) suggests that training materials are materials, topics or things that are discussed and processed in training. The training materials have been validated by experts and can be used in ICT-based training at SMK Negeri 12 Medan. The training material is the creation of learning media using the application Canva.

With the training package, it is easier for trainees to understand the training material compared to previous training without using a training package, where trainees constantly ask about training materials that are not yet understood. But with a training package on the development of ICT-based training management model

participants can more easily understand the material training, at anytime and anywhere trainees dapat study material through training google classroom throughout the trainees have internet network. Training materials need to be prepared so that trainees are more motivated in learning the training materials. The training material contains about how to make learning media with Canva which is equipped with video tutorials for making learning media.

3.3. The Strengths and Weaknesses of the Research on the Development of an ICT-Based Training Management Model

Based on the researcher's analysis, the development of an ICT-based training management model has the following advantages:

1. The ICT-based training management model is the result of the development of a factual model at SMK Negeri 12 Medan. Development based on training needs analysis by implementing management functions, namely: planning, organizing, implementing, evaluating and monitoring as well as post-training follow-up to determine the ICT competence of teachers.

2. The training management model and training package are easy to understand and implement. The training package is included in the google classroom so that participants can learn the material anytime and from anywhere online.

3. ICT-based training management model of the development value can increase the effectiveness of the Traffic ICT trainees before and after training through the pre-test and post test (Wilcoxon test results p (0.00) <0.05)

Based on the advantages of the research results, the researchers also found the following weaknesses from the research results:

1. The implementation of ICT-based training was carried out online so that it was constrained in terms of poor network connections.

2. The developed ICT-based training management model still requires extensive testing outside of SMK Negeri 12 Medan. This is due to limited funds and time as well as the covid 19 pandemic.

4. CONCLUSION

The ICT-based training management process consists of planning, organizing, implementing, evaluating and monitoring as well as post-training follow-up. Each ICT-based training management process is carried out online and complies with the health protocol for the spread of the COVID-19 virus. The planning process begins with an analysis of training needs. The training is conducted based on a training needs analysis.

The ICT-based training management model developed is better than the previous training management model. The ICT-based training management model as a result of the development is carried out with a structured evaluation and post-training follow-up and is equipped with a training package that is carried out online using the platform Google classroom. The result of the application of ICT-based training management model through a limited test that shows the differences in the results of pre-test and post-test increase the effectiveness) of the participants before and after the ICT-based training with T test, Wilcoxon p (0.00) <0.005. An effective ICT-based training management model can improve the ICT competence of teachers at SMK Negeri 12 Medan. The results of the principal's supervision on post-training follow-up activities showed that the participants who graduated from ICT-based training were very professional in making learning media with Canva with an average of 3.59 (very professional).

The advantage of the ICT-based training management model is that the ICT-based training management model is the result of the development of a factual model of training management at SMK Negeri 12 Medan which can effectively improve teachers' ICT competencies. The weakness is that the ICT-based training management model still requires wider testing outside of SMK Negeri 12 Medan. This is due to limited funds, time and the COVID-19 pandemic, so the training is carried out online.

REFERENCES

[1] Arikunto, Suharmini. 2016. Research Procedure: a Practical Approach. Jakarta; Rineka Cipta.

[2] Hamalik, Oemar. 2007. Employment Training Management Integrated Approach to Human Resource Development. 4th printing. Jakarta; Earth Literature.

[3] Hardjana, AM 2001. Effective Human Resources Training. Yogyakarta; Canisius Press.

[4] Iftakhar. 2016. Google Classroom: What Work and How?. Journal of Education and Social Sciences.Vol.3;12-18.

[5] Notoadmodjo. 2009. Human Resource Development. Jakarta; Rineka Cipta,

[6] Permana, Pepen. 2009. E-Lerning, Online Learning Management System (http://file.upi.edu/Directory/FPBS/JUR_PEND_B AHASA_JERMAN/1980021020050 11-PEPEN_PERMANA/Articles/PEPENPERMANA-Articles-Elearning.pdf). Accessed on February 4, 2021.

[7] Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 22 of 2016 concerning the Regulation of the Primary and Secondary Education Process.

[8] Sumaryanto, T. 2007. Quantitative and Qualitative Approaches in Art Education Research. Semarang; Unnes Press.

[9] Sugiyono. 2017. Educational Research Methods (Quantitative, Qualitative and R & D Approaches). Bandung; Alphabet.

[10] Terry, GR 2003. Principles of Management.8nd ed. United States of America; Illions Richard D. Irwin, Inc.

[11] Law No. 14 of 2005 concerning Teachers and Lecturers.