

The Practicality of Training Models Based on Knowledge Management System

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Abstract—The developing training models that meet the needs of teachers is an attempt to improve skills and professionalism. This article discusses the usefulness of the computer network knowledge management system skills training model for high school computer science teachers to develop their professional skills. The research method used is R & D with ADDIE Development Procedure. The development of this training model uses a modified training model. This training model generates a syntax: a) introduction; b) demonstrations; c) discussion; d) implementation of B-KMS training; and e) evaluation of training, as well as products including: (1) a training book template; (2) guide for the training book; (3) material training book; (4) manuals to guide administrators and users; (5) application of the knowledge management system. The usability test of the research results shows that this training model is considered very useful, a practical model book is practical, a practical training manual is practical, knowledge management system is convenient. Based on the results of the data analysis above, it can be concluded that the training model and the support products it has developed have been put into practice.

Keywords—*training model; computer network technology; practical training models; knowledge management system*

I. INTRODUCTION

Vocational and vocational education, as education for the world of work, plays a very important role in its function and position in achieving the objectives of employment policy. The employment policy of a country must have four main points, namely: (1) to provide employment for all workers in need; (2) jobs are balanced and equitably distributed in each region and region; (3) provide sufficient income based on the opportunity to live in a community; (4) education and training are able to fully develop the potential and future of each individual; (5) Match people and employment with minimal losses and high and productive income [1]. Secondary vocational education is part of demand-driven vocational education in industrial markets, which requires qualified and professional staff. The basic principle of the development of vocational education refers to one of the designers of vocational education, Charles Allen Prosser. Prosser is known for compiling the 16 principles of professional training or is often called the Prosser proposal. Prosser believes that schools should help their students find jobs, keep their jobs and pursue their careers. Prosser believes that vocational schools should be open to the public as an

alternative to existing public schools. The vocational school in question is a school that offers courses for different types of jobs in the industry. Prosser believes that vocational education at the secondary level can make students more independent [2]. Vocational education develops according to the changing world of work and the demands of society through two social institutions. First, social institutions in the form of working structures with organizations, roles or tasks and behaviors related to the selection, acquisition and consolidation of careers. The second social institution, in the form of a dual educational function, namely a means of preserving culture and a means of social change [3].

This policy requires parties, schools and industries to formulate together a concept to make schools and industries compatible. Compliance is such that the skills acquired by students in school are skills required in the industrial world. Industry must also play an active role in transferring technological advances to schools in order to synchronize the industrial world with the world of education [3]. This synchronization certainly requires human resources with professional skills. Teacher professional development is an essential tool to deepen understanding of new things in education, to help teachers implement the results of new educational innovations and to improve their education [3]. The professional development of teachers can take place in different forms of activities and activities such as mentoring, modeling, workshops, courses, structure, observation and training. Professional teachers must always improve their professionalism. Teacher professional development activities should be conducted in a sustainable or permanent manner, consistent with government programs to address the challenges of teacher competence in the 21st century, in order to develop a professional development process or ongoing professional development.

Based on the results of interviews with several teachers of Vocational High School, namely SMK N 1 Sitiung, SMK N 1 Arbor Island, SMK N 7 Sijunjung and SMK N 1 Muara Bungo, showed that during the implementation of the development Skill Model for Teachers of SMK Expertise Computer Engineering The network is still partial or incomplete and the development of these skills has not been sustainable either. This has been demonstrated, among other things: (1) the functional training of teachers in Computer Network Subject

Teacher Consultation's Computer Engineering Professional Training Network was still very limited and could not reach all computer science teachers because of the resources, limited infrastructure and infrastructure; (2) The functional training of vocational school teachers or the computer technology expertise of the network is considered non-continuous. (3) Many teachers in the networked computer training school do not wish to take training if they have to pay privately; (4) The existence of different skills of teachers who teach at the vocational school or computer expertise in a network needs to be improved in accordance with the expertise in the field of network technology.

Based on the results of the implementation of the National Teacher Certification in 2016, the number of teachers participating in the 2016 Teacher Certification PLPG was 70,757, or 68,777 participants (96.25%), 787 participants (1.11%). there were 1,863 participants who did not finish (2.64%). Of the 68,107 participants who completed the PLPG, 67,553 (99.19%) passed the PLPG and 554 failed (0.81%). Of the 67,553 participants who obtained PLPG teacher certification in 2016, 17,100 participants (25.31%) obtained teacher certification in 2016, passed the UTN test, they were 9,030 (13.37%), and 41,423 (61.32%).

Training provided by the Education Office uses a training model with a packaging system. This model has many weaknesses, including: 1) some teachers are of the opinion that they have not improved their ability; 2) training skills sometimes do not match the needs of teachers and schools; 3) teachers are not very motivated because they feel they are not appreciated at first; 4) there are still teachers who consider lifelong learning as a mere formal activity, as this has no significant influence on teacher performance; 5) less stimulated creativity and innovation; 6) results of training activities do not include monotonic reports and training processes; 7) School training activities were a budget burden for the school. 8) The training material presented is often overloaded with a relatively short time, often starts in the morning and ends until evening, so that the ability to evaluate the material is not available, 9) presenters or trainers meeting the needs of trainees.

This training model is less appropriate for the ability and experience of teachers to develop their skills, and participation in training is often problematic. Teachers are usually teachers close to officials of the Bureau of Education. the limited number of participants. Although teachers must always develop as a profession. The development of teacher professionalism must, above all, be based on the needs of the teacher, in addition to the needs of the institutions and groups of teachers [4]. The teacher has three main characters, namely a functional, professional and professional learning position. According to Danim, teacher development is important, but most importantly, the subject of the study and the learning context evolve and evolve according to space and time [5]. Efforts to develop the professionalism of teachers should be implemented in their efforts to acquire knowledge, understanding and skills related to their tasks, in order to always keep abreast of developments in the world of education.

In this context, efforts are needed to improve and improve the professional skills of teachers and one of the models used for teacher professional development is training. The training model developed must be able to meet the needs of participants with different skills characteristics. Snelbecker states: "A model is the realization of a theory that is intended to be analogous or representative of the processes and variables involved in the theory" [6]. Computer Engineering Training Model This Knowledge Management System-based network uses and optimizes the use of information technology accessible online. The knowledge management system is designed to document, classify and disseminate knowledge. Knowledge where knowledge encompasses the activities of institutions in the area of knowledge management as an asset, with a variety of strategies to disseminate specific knowledge to the people involved and in a short time, so that they can communicate, share knowledge and share knowledge. apply in their daily work to improve performance and maintain institutional sustainability [7].

From this point of view, the model of this study is essentially a realization of the theory used to describe the processes and variables contained in knowledge theory-based training theory for professional network expertise. secondary vocational education, namely: 1) the conceptual component (construction) training based on a knowledge management system, in the form of definitions in the form of scientific languages describing the theory of training and a knowledge management system; 2) the procedure, i.e. the steps to follow to reach the designated destination; and 3) the objectives, in the form of a mastery of expertise in the field of computer network technology.

Training is one of the management functions that must be exercised continuously to support organizations. Training programs are important not only for individuals, but also for institutions or organizations and human relations in working groups. Training is an investment in human resources in an institution. The training phases are a continuous cycle of activities including: (1) training needs analysis, (2) training program planning, (3) preparation of training materials, (4) training for training, implementation and (5) evaluation of training courses. In line with the latest developments in information and communication technologies (ICT), particularly the Internet, in order to improve the quality of the skills and professionalism of teachers, these will be increasingly forced to use of their superiority. The existence and benefits of the Internet as a source and reference in the world of education are closely related to the concept of "Open Learning Resources / SBT" (i.e. open learning resources / REL), i.e. a digital medium that can be used or reused freely and openly. everybody. learning, research. With the existence of the computer skills training model based on the knowledge management system for secondary school teachers, all questions relating to the expertise of computer networks will be well documented and distributed to all teachers in an appropriate and timely manner. All teachers can share their knowledge and experiences in the field of learning, career or expertise. The secondary vocational teacher group acquires network technology expertise with good professional skills, becomes a facilitator and a means for students to achieve their

learning objectives by enabling them to achieve these goals. Based on the above description, the authors are interested and should conduct research on training in knowledge-based management systems to develop the professional skills of computer network experts of secondary school teachers, in accordance with their area of expertise.

A. Competence Professional High School Teacher

Spencer and Spencer stated that the competency was as follows: "A competency is an underlying characteristic of a person related to an actual and / or superior performance mentioned by criterion in a function or situation" [8]. According to the Australian National Training Board (NTB), the following competencies "Competencies bring all these task elements, skills and knowledge, and add a standard of performance. The skill is written in the form of a task to perform, the Competency in order to standardize the construction of competency statements, NBT has defined the nation as follows: 1) Competency unit referring to the general area of work, 2) Competency elements 3) Performance criteria set the standard for that the trainee can be qualified as: competent [3].

B. Training Model

One of the professional development models for teachers is training. Snelbecker states: "A model is a concretization of a theory that is intended to be analogous or representative of the processes and variables involved in the theory" [6]. While John J.O.I states that the model is essentially the same as the theory, i.e. a system of propositions or an integrated series of propositions [9]. Explained further that the model is different from the theory in terms of level of abstraction. A model is built from a series of high-level abstraction propositions. In keeping with John J.O.I. [9] and Snelbecker [6] views, the model of this study is essentially the materialization of the theory used to describe the processes and variables of teacher education. Secondary networking skills in computer engineering, namely: 1) the training component based on the knowledge management system, in the form of a scientifically defined language that describes the theory of training and the knowledge management system; 2) procedures, i.e. the steps to be taken towards the intended destination; and 3) Objectives, in the form of mastering expertise skills in computer network engineering. The Bridge Training Steps in Haris Mudjiman, are a cycle of sustainable activities including [10]: (1) Training Needs Analysis, (2) Training Program Planning, (3) Material Preparation training, (5) training evaluation.

C. Knowledge Management System

The concepts and definitions of knowledge management, among others, were raised by Davidson and Philip Voss [11], Knowledge Management as a System for Business to Acquire Knowledge, according to Batgerson, Knowledge Management or Knowledge Management is a systematic approach to managing intellectual assets and other information to provide a competitive advantage to the business [11]. According to Skyrme proposed a definition: "Knowledge management is the explicit and systematic management of vital knowledge and related processes of creation, organization, dissemination, use

and exploitation." [12]. According to Jay Liebowitz, "knowledge management is the process of creating value from an organization's intangible assets." [13]. This definition is not the only correct definition because there is no universal definition of knowledge management This definition is a definition of Skyrme that best represents the notion of management of knowledge [12]. Another definition indicates that knowledge management is the value of intellectual assets and knowledge. Based on several definitions above, it can be concluded that knowledge management is a process of identifying, capturing, organizing knowledge, documenting and disseminating the knowledge that individuals possess as assets. intellectuals

II. METHODOLOGY OF RESEARCH

The research methodology used is research and development with ADDIE development procedures (analysis, design, development, implementation and evaluation). The training model for computer networking expertise focused on research and development of the knowledge management system was conducted with 35 computer engineering teachers. Usability test Training model on computer network engineering expertise based on a knowledge management system for computer networking expertise Teachers in a school environment, using a practical instrument.

A. Product Test

The test of Product testing for a self-data cooking using used for identification. Nieveen [14], Van den Akker refrain from product for product, it is necessary to evaluate / test a product designed to illustrate the disadvantages and strength [15]. Dance this study, the practical tests, the effect on the demineral evaluation / practicality of the product and the development course. Practical tests but not the standard of measurement and practicality of the product according to the user or the evaluation of the user. The products do not involve any product practice is jovial.

B. Types of Data

The type of data needed in this study includes: The Data Modeling Model for Skills Modeling Data Practices. Quantitative data is data obtained from the results of questionnaires provided by computer science teachers, IT professionals and application administrators.

C. Data Analysis Techniques

The analysis of dedades of search was done with Statistics Statistics

1) *Description of the data*: The description of the data is performed to determine the position of the data in a group. The description, the average, the mode, the deviation, the highest value, the lowest value and the number of realization values.

2) *Practice analysis*: The data are in fact the model, they are observed from the observation, the observer of the participant, the computer scientist, the computer scientist or the computer scientist. using a Likert scale. The commodity of

the product is used and consists of this training dance. Analysis of the family members of the fashion learning skills training and computer skills of enigneers and computer engineering of vocational schools, proceeding as follows:

- Give the respondent score with the criteria: 1 = Very least (SK) 2 = Less good (KB), 3 = Moderate (standard deviation), 4 = Good (B) and 5 = Very good (SB)
- The end of the plausibility is statistical by descriptive with a formula the conversion rates the quantitative data and the qualitative data

III. DISCUSSION AND RESULT

The practicality of this research and development was evaluated through a computer-based training model based on the network management technique for computer engineering teachers from vocational schools, computer scientist's / journeymen teachers and system administrators. This training developed

A. Practical Aspect of Participant Perception

1) *The practicality of the computer networking expertise training model based on the knowledge management system:* The results of the skills training practice tests based on a computer network model of knowledge management system of the participants in the perception (Master professional skills of computer network) with an average value 90.10% with a very convenient category.

2) *The practicality of the training manual on network engineering skills based on a Management system data processing:* The Outcomes practical guide testing skills training based on a computer network model of the participants with knowledge management system in the perception (Master professional skills of computer network) with average value of 86.11% with a practical category.

3) *Practical guide for the implementation of the training:* The practical test results of the Computer Network Engineering Vocational Teacher Implementation Guide with an average value of 88.80% in the Practical category.

4) *The practicality of computer networking equipment:* The results of the computer network engineering manual's practical test are perceived by the participants (computer science teachers) with an average value of 86.74% in the practical category.

5) *Practical guide for using KMS applications:* The results of the practical tests Guide to the application user's knowledge management system of the participants in the perception (Master Professional skills of computer network) with an average value of 86.06% with a practical category.

6) *Practical aspect of the application of the knowledge management system:* The results of the application knowledge management system feature test in participants' perceptions (SMK computer network engineering skills teachers) with an average value of 88.04% with practical categories.

B. The Practical Nature of the Perception of Practitioners of the' Computer and Accompanying Teachers

1) *Practical guide for using KMS applications:* The results of the practical test guide the user to use the knowledge management system in the perception of practitioners / trainers with an average value of 88.80% in practice category .

2) *Practical aspect of the application of the knowledge management system:* The results of the practical test Application of Knowledge Management System in Perception of Computer Practitioners / Adjunct Professors with an average value of 85.33% in the practical category.

C. Practical Aspect of the Administrator's Perception

1) *Practical guide for using KMS application:* The results of practical management tests User Guide Knowledge System Application of the administrator in the perception of the average value of 88.00% with a convenient category.

2) *Practical aspect of the application of the knowledge management system:* The practical test results of the application knowledge management system in the perception of administrators with an average value of 87.56% with the practical category

IV. CONCLUSION

On the basis of the explanations above, it can be concluded as follows:

- This training model based on a knowledge management system is part of the development of sustainable skills.
- The research resulted in a computer skills training model based on a knowledge management system with syntax: a) introduction, b) demonstration, c) discussion, d) implementation of training
- A training model for network and computer technology expertise is developed for vocational education teachers with skills in the field of computer technology.

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