Development for Vocational Teachers' Professionalism

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Abstract

Within the last five years, the development of vocational teachers' professionalism has obtained significant attention from the government. With the policy of Ministry of National Education, it has been implemented in various programs, including the teacher certification program, recognition of prior learning, educational with minor authority and others. Through the teacher certification program, it is expected that in 2014 2.6 millions teachers will have been certified. This target seems too ambitious, considering that up to 2010, the total number of teachers having been certified is only 743,070 (28.5%).

Developing vocasional teachers' professionalism constitutes a systematic process to develop their competencies concerning their knowledge and skills, with the aim to improve the teachers' performance by means of supervising, training, and education. Developing the vocational teachers' professionalism supported by the information and communication technology (ICT) will be able to reach the teacher community in more diverse spectrum of geographic, educational level, and teaching experience, so that the number of teachers being served will be much greater.

Developing vocational teachers' professionalism through ICT-based programs of education, training, or tutoring, will be able to improve the teachers' competence efficiently.

Keywords : information and communication technology, developing vocational teachers' professionalism

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1. Introduction

Recognition of professional positions for teachers and educators take 60 years. Nearly one human generation. Legally, the state recognition of the educational professions was materialized in 2005, namely with the publication of Law No. 14 of 2005 on Teachers and Lecturers. With the issuance of Government Regulation (*Peraturan Pemerintah*, PP) No. 74 in 2008 on the teacher. Based on the PP No. 74 Article 8 and Article 12, there are two different programs of certification, i.e. certification program for pre-service teachers and certification program and in-service teachers. The pre-service teacher certification program is implemented through the pre-service Professional Teacher Education (PPG) Program, which is intended for prospective teachers who already have gained academic qualifications D4 (diploma) or S1 (graduate) degree. While the certification program for in-service teachers is carried out taken by: 1) in-service Professional Teacher Education (PPG) Program, 2) competency test through portfolio assessment, and 3) administering the teacher certificates directly.

Four years after the implementation of Certification Program for in-service teachers, the Ministry of National Education (Kemdiknas) is still looking for an appropriate certification program which can be accepted by all parties. Various programs of teacher certification have been carried out, showing a noble effort of the government to ensure that the certification program for all teachers can be completely implemented in 2014. Is this target likely to be realized by Kemdiknas? Data in Kemdiknas shows that in 2010 the total number of teachers in Indonesia is as many as 2,607,311 teachers. Strategic Plan of the Directorate of Teachers and Educational Staff Management Development (PMPTK) has planned the completion of education certification program in 2014. Referring to the data above, PMPTK had set the target that, in 2010, 1,434,021 or (55%) teachers would have been certified. With a quota of 200.000 teachers per year who will follow the certification program through portfolio assessment and /or the Teacher Education and Professional Training (PLPG), it might take nine years (to be completed in 2019), meaning that the strategy completion of professionalism programs for teachers through the certification process track your portfolio and / or difficult PLPG expected to reach the target by 2014.

With a quota of 200,000 teachers per year who will follow the certification program through portfolio assessment, it will take 9 years to complete the program, which means that all the teachers in Indonesia will have been certified in 2019.

Lately, the Directorate General of Higher Education (Dikti) roll out various programs to enhance the professionalism of teachers, among other programs: Recognition of Prior Learning (PPKHB), Integrated Teacher Education Profession (PPGT), Professional Teacher Education

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Collaborative (PPG Kolaborasi), and the Education Authority Additional (KKT), etc.. Some programs are partially intersect with teacher professional development Vocational Senior High School (SMK). Data "Balitbang" year 2008/2009, the number of vocational teachers as much as 246.018, consisting of 88.563 school teachers (35.99%) 157.455 teachers and private teachers (64.01%) teachers. Based on educational background, vocational teacher education under S1/D4 much as 45.404 teachers (18.46%) and above S1/D4 many as 200.614 (81.54%). This means that there are still one-fifth (18.46%) vocational teacher who still can not say as a teacher of professional worth.

Certification program for vocational teacher pursued by the current government, is a noble and dignified effort to improve the professionalism of vocasional teachers. But the essence of professionalism as vocational teacher, the government should facilitate the development of vocational teacher's professionalism programs on an ongoing. Therefore, that development programs and vocational teacher professional development strategies domain should be assessed in the forum of the National Convention to VI Technology and Vocational Education Association (APTEKINDO) 2012.

2. Development of Teacher's Professionalism

Being a professional has the meaning of having a job or an activity which is carried out and become a source of income to make a living that requires expertise, skills, or competencies that meet certain quality standards or norms and require professional education (Article 1, point 4 of Teachers and Lecturers Act). Meanwhile, the term teachers refer to professional educators with the primary task of educating, teaching, guiding, directing, training, assessing, and evaluating students in elementary education and secondary education (Article 1, point 1).

Teacher's professional development is a process where teachers and principals learn, improve and use the knowledge which is appropriate to the skills and values. The idea of appropriateness itself must be based on considerations of shared values and public values to the needs and best interests of the students (Bolam, 2000). The development of teacher's professionalism can be reached through various stages as follows:

1. Early preparation stage. At this stage, the educational institutions provide training to teachers-to-be (prospective teachers) by giving a number of experiences, related to the activities both inside and outside the classroom.
2. Induction stage. This stage is the first year for students (prospective teachers) to teach. The Prospective Teachers begin to do a process of synthesis of various obligations required by the education programs or the related schooling program.
3. Sustainable development stage. At this stage mentors (senior teachers) participate in various opportunities to shape professional character of the prospective teachers, to sharpen their skills and provide opportunities for prospective teachers to collaborate with the group and to develop plans in subsequent years.
4. Renewal stage. In each stage, the mentors are able to participate in activities that could contribute to renewing their activities both personally and professionally. Renewal can lead to a professional who is highly motivated and trained, so as to meet the demands of his job.
5. Recruitment and selection stage. The mentors, in collaboration with various stakeholders such as the partner schools and Field Experience Program, will develop a teacher recruitment program, which can indirectly help prospective teachers to prepare themselves in the process of recruitment. Students (prospective teachers) are encouraged to pursue their career choices, so that eventually they could present themselves optimally (McNergney, RF and Herbert, JM, 2001).

Development and training for teachers is a human resource development activity which often obtains the largest proportion in the field of education. In general, development and training is defined as the systematic process of developing a job related to knowledge and skills of a person, with the aim of improving his/her performance (Swanson, 1996). Davis and Davis (1998) explain that, development and training is a systematic process to develop the skills, provided information, and attributes to help improve individuals who work in an organization, so that the performance of the organization becomes more effective and efficient. Training helps schools to meet the target and purpose of the schools. Related to the development of teacher's professionalism, the knowledge and skills implemented is associated with pedagogic competence, personality, social and professional (field of study).

According to David and David (1998), training is focused more on the new teachers or to help prospective teachers to meet the required competencies, so that the teachers' competencies should really add value to the school, while development is relevant for teachers who have a great chance to contribute to the development of school's potentials.

In the midst of this rapid development era, information and communication technology becomes a necessity that cannot be abandoned. Information and communications technology does not only spread out in urban schools, but has also reached the schools in rural areas. It is an inevitability that the development and training for teachers which have been developed by Education Department or professional educational institutions are based more on information and communication technology (ICT). ICT-based development will encourage the teachers to be ICT-literate and eventually the teachers will make use of ICT in the teaching-learning process in the classroom. ICT-based or internet-based learning and computer aided learning has become a tendency for academic options to achieve better results from student learning.

Considering the essence and natural usefullness of ICT to assist the duties of professional teachers, then the program of development and training conducted by Education Department or related institutions must give priority to how teachers are able and skilled in using Internet-based learning and interactive multimedia instruction.

3. Internet-Based Education

Some practices of the utilization of information and communication technology (internet) in schools are, among others, to improve the quality of academic information system, information system management, learning management system, and learning resource system. Since the proliferation of the use of Internet as a learning management system, various terms related to internet appear such as: e-learning, online learning/internet-based learning, e-education and web-based learning. Globally, those terms have similarity in common. Fery (2000) slightly distinguishes three areas of learning based on information and communication technology, i.e. e-learning, internet-based learning, and web-based learning.

E-learning is the concept of learning based on electronics technology, such as video technology, audio technology, information technology, or communication technology. According Hartanto (2002) e-learning can be defined as a form of information technology applied in educational field in the form of a virtual campus. The definition of e-learning itself is actually very broad, and even a portal that provides information about a certain topic can be included within the scope of e-learning. However, the term *e-learning* is more appropriately addressed as an effort to create a transformation of teaching and learning processes that are formerly available on campus into a digital form that is abridged by the Internet technology.

Online-based learning/internet-based learning is the concept of learning that uses information and communication technology, especially the Internet, where the teaching process conducted by teachers and learning process conducted by students are carried out via e-mail, discussion forums, a particular web site, and all internet-based applications.

Web-based learning is a system of distance learning based on information technology using web interface. According to Jolliffe, et.al. (2001), web-based learning is the process of sending and accessing data to coordinate a collection of learning materials using a server to send the material, a browser to access it, Transmission Control Protocol (TCP) or Internet Protocol (IP) and Hypertext Transfer Protocol (HTTP) as an intermediary that is used for connecting the host computer to the Internet. The HTTP of the main protocol used is *World Wide Web*. HTTP can be understood as how a certain message is prepared and transmitted.

Because these terms in principle have the same core that is a learning process that uses internet technology, here one term is selected to be henceforth used, i.e. e-learning, a form of applied information technology used in education in the form of virtual schools, the process of delivering and accessing data to coordinate a collection of learning materials with electronic media using a server to send the material, a browser to access it, TCP / IP and HTTP protocol as an intermediary.

Fery (2000) says the development of Internet technology runs very fast and almost everyone who has already known it will be willing to indulge in the facilities provided by this technology. Various types of information can be accessed through the pages at a particular Internet web site address. Then, what is the difference between a web site that only provides general information and a learning website that conveys a specific educational mission? Web sites that only convey general information or messages will not cause the receiver (audience) of the information to feel responsible for conducting an act or performance that can be measured or assessed. Oftentimes, web sites like this present something that is common to give a description of the idea or on a particular topic. A website is said to be a learning website if the information and messages that are presented requires responsibility from the receiver (audience) to perform an act which can be measured and accounted instructionally. Learning web sites, besides displaying a learning management, also causes the recipients of the program to be able to prove that they have made the learning process.

In the context of developing e-learning in schools, designers of the course material (content developer), teachers, and students have to equate the concept and the perception that the presence of online learning materials is not to replace the role

of teacher in delivering face-to-face instructions, but the online materials should function as a supplemental materials or enriching learning materials. Thus, besides the learning management of scheduled lessons, independent tasks and structured tasks, the learning system through e-learning is still in control and monitored.

3.1 Characteristics of Internet Based Learning

Just like the growth of other applications available on the internet today, e-learning is also increasingly diversed and always experiences renewal. For example: a college degree can be obtained by learning via the web, information of books and journals can be accessed via *e-library*, live radio broadcast about the concept of learning, virtual laboratories that connect some researches, and countless number of trainings and education programs.

Jolliffe, et.al. (2001) states that of the many methods and technologies used in e-learning, there are several common characteristics, i.e.: 1) learning materials consist of text, graphics, and multimedia elements like video, audio, and animation; 2) the presence of synchronous and asynchronous communication application such as video conference, chat rooms, or discussion forums; 3) using a web browser, 4) storage, maintenance and administration of the material are carried out in the web servers; and 5) using TCP / IP and HTTP to facilitate communication between students and learning materials or learning resources.

Soekartawi (2002) explains that an e-learning should have several characteristics, namely: 1) using the services of electronic technology, where teachers and students, students and fellow students or teachers and fellow teachers can communicate relatively easily without being limited by the bureaucratic protocol, 2) taking advantage of the computer (digital media and computer networks); 3) using independent-/self-learning materials) which are stored in the computer so they can be accessed by teachers and students anytime and anywhere when they need; and 4) utilizing the schedule of learning, curriculum, the learning progress and other matters related to educational administration which can be viewed on the computer at any time.

3.2 How to Submit Internet-Based Learning

Jolliffe et.al. (2001) and Sukartawi (2002) state that the way of delivering teaching materials (the delivery system) with e-learning system can be classified into 2, i.e.: one-way communication and two-way communication. Communication that takes place between teachers and students can be done using any or both of the 2 ways above. Learning communication using e-leaning system is better conducted in two-way communication. The two-way learning communication in e-learning system is divided into two, namely:

a. Direct way (synchronous), involving the people who are communicating in real-time, meaning that when teachers deliver the instructional materials, students can directly be involved and can communicate with the teachers. Synchronous communication mode can be applied by using chat rooms, real-time audio, discussion forums and computer video conferencing.

b. Indirect way (asynchronous), meaning that the delivery of instructional materials by the teachers is not carried out directly to the students but are done by previously preparing the instructional materials and upload them for the students who later download them to learn, or send the materials via e-mail.

3.3 The Advantages of Internet-Based Learning

The advantages of internet-based learning include: 1) learning materials can be delivered anytime and anywhere, 2) teachers can use some elements of the CD-ROM- based learning but have to add the element of communication, 3) the learning materials are relatively easy to update, 4) it can to develop the number of interactions between students and teachers or the intermediaries, 5) it allows students to earn both the formal and informal communities, 6) it makes possible the use of problem-based learning and/or task-based learning, 7) teachers/students may use the resources that already exist on the internet, 8) teachers and students can be connected in real time using video conferencing, video streaming, or discussion rooms, 9) it has the ability to integrate various media elements such as text, graphics, audio, video, and animation into the learning materials, 10) information for students can be obtained through the available materials while the manager must be able to check each student's progress, 11) students, for some reasons, find the e-learning environment more enjoyable and motivating, allowing them to submit ideas or demonstrate their knowledge to other students who require it (Jolliffe et.al., 2001).

3.4 The Weaknesswa of Internet-Based Learning

The weaknesses of internet-based learning have a close relationship with the technical limitations of the technology, communications, computers and the internet itself. Over time, however, these problems will be reduced, although of course new problems may appear as well. Jolliffe, et.al. (2001) identify the weaknesses of internet-based learning as follows: communication and interaction is only done in front of the

computer, learning activities becomes expensive, teachers must have sufficient knowledge and skill in designing computer-based learning materials, the limited bandwidth while downloading the teaching material integrated with graphics, video or animation, some learning activities require the students to have a special computer, and students and teachers must have the knowledge and skills to access the Internet.

According to Bullen (2001) in Sukartawi (2002), the weaknesses of utilizing internet for learning are: lack of interaction between teacher and students or even among students themselves, a tendency to ignore academic aspects or social aspects and encourage the growth business/commercial aspects, the teaching-learning process tends to lead towards training rather than educating, the shifting role of the teachers who originally as agents of knowledge transfer into facilitators, supervisors and guides to the students' learning activities, teachers are required to know the teaching-learning techniques using ICT, students who do not have a high motivation to learn will tend to fail, and not all areas have the internet facilities (perhaps this is related to the problem of availability of electricity, communication networks or computer).

3.5 Development Model of Internet-Based Learning

Jolliffe, et.al. (2001) state that the use of media is significantly influential in choosing a learning strategy. Therefore, determining the design of internet-based learning should be planned appropriately by considering the characteristic factors of instructional materials and the audience who become the subject of study. Note that internet-based learning has unique characteristics. According to Haughey (1998), in the development of internet-based learning there are three learning systems, i.e.: 1) web courses, 2) web-centric courses, and 3) web-enhanced course.

Web course model is the use of internet for educational purposes where students and teachers are completely separated and do not provide any face-to-face learning. All aspects of learning that include: instructional materials, discussions, consultations, assignments, exercises, exams, and other learning activities are fully delivered via the internet. In other words, this model uses a system of distance education.

Web-centric course model is the use of internet that combines distance learning and face-to-face (conventional) learning. Some materials are delivered via the internet and some other are through face-to-face learning, each of which functions as complementary to the other. In this model teachers can provide instructions to the students to study the teaching materials via the web that have been made. Students are also given

directions to find out other sources of relevant sites. In the face-to-face meeting, students and teachers have more discussion about the findings of material that has been learned through the internet.

Web-enhanced course model is the use of internet to support the improvement of quality of learning that is done in class. The function of the internet is to provide enrichment (supplements) materials as well as communication between students and teachers, among the fellow students, among students of group members, or between students and other sources. Therefore, the role of teachers in this case is required to master the technique of searching for information on the internet, guiding students to seek and find sites relevant to learning materials, presenting the material through the web in attractive and enjoyable ways, providing guidance and communications over the internet, and other required skills.

The main differences between the design of internet-based instructional materials with multimedia-based instructional materials include four factors: 1) material design, 2) organizational design, 3) page design, and 4) grafic design (Jolliffe, et.al., 2001). In *material design* (design of instructional materials), students who use internet-based learning do not only look at the presented information, but they also need interactions in new ways that are not provided by other learning resources. *Organizational design* is the fundamental reasons associated with the organization of materials to divide some great information collection into several parts. Some basic knowledge that is used in a web environment should be designed so that the number of variables should be kept in minimum conditions. *Page design* is the organization of graphics and text that is performed efficiently, but still has to be able to help students understand the lesson, draw their attention, help them get information and help them interact to each other in interesting ways. *Graphic design* (graphical models) is optimizing the feeling, seeing and learning experiences which constitute very important aspects for the learning efficiency with web learning in the internet-based learning. Using the graph in full screen or graphic as the background, can make students have to wait quite some time for loading the graph. To avoid such problem, it needs considering the strategy of designing a suitable picture to related to the download time.

3.6 Internet-Based Learning Components

Jolliffe, et.al. (2001) state that internet-based learning includes all or part of the following elements:
a. A learning event plan

A learning event plan describes and directs the various learning activities, assessment to student learning

achievements in detail, and the time required to complete the learning activities for students.

b. Learning materials presentation

Component of learning materials are presented to students, just like the presentation of material in face-to-face setting. These materials are specifically designed with a text that is supported by a variety of media to enhance the delivery of learning materials. This component can also involve student interaction through the provision of the quiz, open questions, and summaries that the students should make.

c. Learner assessment

The assessment method used in this component will vary depending on the needs of students and the topics being studied, but there are basically three types of assessment namely: online quizzes, written assignment to be completed offline, and examination.

d. Internet resources

Internet resources are available to assist students in enhancing their understanding to the materials. These sources may include an online library and a list of relevant websites.

e. Instructional support

Internet-based learning services include electronic services and facilitators for students. Electronic services can be made in the form of a glossary or a list of Frequently Asked Questions (FAQ). Facilitator services include: e-mail, mailing lists or e-conference (conference using computers).

f. Technical support

Services include some form of technical assistance that will answer students' questions regarding the learning activities, learning resources or the computer itself.

4. Conclusion

With the number of teachers reaching 2.6 million and 246 thousand vocational techers, the conventional efforts in developing teachers' professionalism will require much expense and time. Various parties have recognized that professional development for in-service teachers should be carried out systematically and continuously. ICT-based teacher professional development is an innovative as well as efficient strategy for human resource development. These efforts will be successful and effective if the program is designed in an integrated, systemic way and in accordance with the needs of the teachers and schools.

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