Innovation of Vocational Technology Education

Continuing Professional Development a Vocational Education Teacher in West Java

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A R T I C L E   I N F O

A B S T R A C T

Continuous professional development of vocational teachers is a strategic effort to increase the competence of professional vocational teachers in a planned and structured. Professional vocational teachers have mastery of competencies demands a comprehensive multi-dimensional. Competency professional standards based on juridical regulation, which includes professional competence, personal competence, social competence and ped-agogical competence. Multi-professional competence of vocational teachers increasingly complex, because the substance of technological and vocational extremely varied and has very wide dimensions. The dynamics of technological and vocational education has a high acceleration, in line with the development of business and industry. The substance of the subject matter and learning model developed adaptive and portable, so as to synchronize the changes that occur. This paper will identify a comprehensive identity-based teacher professional culture-based model 'Raymond Gagnon'. Teacher professional identity associated with the technical efforts undertaken vocational teachers in West Java in an effort to improve the mastery of basic prerequisite's professional teacher competency standards. Descriptive analysis was conducted to describe the specific technical efforts in improving professional skills had been done, either individually, or in groups of formal institutions. The final result can be seen mapping profile in a structured continuous professional development and conceptual provide strategic impact to the renewal of knowledge and the improvement of teaching practices in the classroom teacher. Implications of the study of the issue of continuing professional development provide a conceptual input to various relevant parties on the professional development of vocational teachers in a more comprehensive, systemic and structured.

1. Introduction

The process of continuous professional development through various activities, activities the program, training course, interns and various other activities done by teachers excavated and analyzed compre-hensively providing competency improvement professional vocational teachers. Learn throughout the life of the main need for all and especially for those who have a direct task the development of education in school teachers. Competency Improvement teachers will give impact to the growth of wealth and the success of the educational institutions. Specifically for vocational education challenges to the front of the far more serious because vocational education has the diversity of jobs and industry. Vocational Education challenges to the future of not only in the local territorial dimension, national and regional, but also has a time dimension that goes to the fore with the condition continue to be dynamically changed. For professional teachers, vocational education sector is very important to maintain and renew the skills and knowledge in order to resolve the dynamics of the multi-dimensional world of work with the pattern of reform and competition which continues to increase. Therefore vocational education system must have the structure of the development of human resources is adequate and effective (Simons & Snewin, 2001)

Many factors that affect the capability and the capacity of the vocational teacher's competencies, but in research is only four components that will be analyzed. The first variable associated with the substance of the commitment competency improvement of academic skills and was a reflection of the efforts by vocational teachers in improving competently scholarly competence both in the concept of the the oretical and practical aspects of skill and industry. Extensive individual experience as vocational teachers and work experience in the industry is part of a partial section became an important component in improving the professional capabilities (Köpsén, 2015). General knowledge of teachers in the context of professional development related to the capacity of the implementation of tactical and strategic tasks. Investigation of the knowledge of the teacher to identify the elements of the general public so that they can perform complex tasks and specifically including from the point of view of the methodology. Therefore the understanding of the knowledge of the vocational teachers useful to improve the education of teachers and education innovation that more successful.

The second variable related to the improvement of pedagogy competency which is the main instrument in the development of learning learners in all units both in the classroom and laboratory, studio and workshop. The mastery of pedagogy competency there in includes the ability lesson plan is based on the mastery of the rules pedagogy and the structure of the curriculum (E. Smith, 2009). The third variable that gives the influence of professional vocational teachers abilities is competency improvement personality a professional vocational teachers. The argument from the perspective of the personality of the teachers are still dichotomizes on the one side of the opinion that the good teacher is born but on the other hand, there are also holds the ideal teachers should be formed and through the process of the construction of the long term. Compromise the best personality teachers who qualify ideally have talents and then developed professionally through various competency improvement program (Olorundare, 2003). The fourth variable associated with competency improvement ethno pedagogy professional vocational teacher. The system of cultural and social education is the two sides of the currency to one another cannot be separated routine social community, development, and amendments there to be the value system of life that will be the content of the knowledge. Professional teachers should become a successor to the professional cultural at delivery lessons in class (Marielle Anne Martinet & Danielle Raymond, 2001). Professional vocational teachers need strengthening comprehensive about the principles of pedagogy will be the investment in developing the learning process, the transfer of knowledge and values of life. Education vocational technology has its own pedagogy characteristics because it contains the value system of the formation of human resources in the form of labor skilled personnel rele-vant to the industry and understands the value system of the social and cultural society.

2. Continuing Professional Development for Vocational Teacher

Competency improvement is an effort to improve the ability of teacher's professional standards in the education boarding tasks and responsibilities of professional. The sense of professional teacher competen-cies much is discussed in detail with clear analysis and interesting. Some definition of offer their under-standing the basis that includes various dimensions, based on theoretical studies that each complementary. The understanding is different because the point of view of taken as well as the use of the idea of competencies that are less compatible. Competency is a characteristic of the underlying causes of the performance of the individual in one job or certain situations in a superior. The competencies into two

big part of competency 'threshold competencies' namely basic skills that belong to the individualized in doing a work in order to achieve the goal of minimum and 'differentiation competencies' namely the competencies possessed by each person that one another different functional (Lyle M. Spencer, Jr., 1993). Another definition of the competencies stated that the competencies are the characteristics or the ability of the individually in performing certain specific actions, causing more effective performance (Nikolaou, 2003). The competence inherent more powerful because individually perform actions that are repeated continuously on a certain job and become more effective (Sparrow, 1995). Besides that in the context of social professional vocational teachers should understand the rule of law and ethics that exists in the environment a healthy society. Therefore structurally SMK teacher's professional competencies can be formulated as follows:

Table 1. Categorization Competencies Teachers Professional Competencies

Competences	Indicator	References
Professional	• Comply with ethic and legal standards • Communicate effectively • Undertake efforts to update knowledge • Demonstrate commitment and favorable attitude	(Houston, W.R., & Howsam, 1972)
Pedagogical	• Design instructional strategies • Develop appropriate learning resources • Implement instructional strategies • Facilitate participation among students • Sustain students' motivation	
Social	• Manage the time and course • Demonstrate leadership qualities • Establish rules and regulations	(Salmon, 2000)
Administrator	• Access various technological resources • Select the appropriate resource for learning • Develop different learning resources • Suggest resources to the students (resource provider)	
Technologist	• Suggest measures to enhance performance • Provide guidance based on student needs	(Salmon, 2000)
Counselor	• Conduct research on classroom teaching • Interpret and integrate research findings into teaching.	(Shank & Shank, 2004)

(Bawane & Spector, 2009)

Sustainable professional development includes learning, training, improving the skills and knowledge of industrial environments become great obligation a teacher professional. The learning process provides a great opportunity to increase capacity to integrate new experience and adapt to the new situation. Even in certain scale competency improvement will be able to change, maintaining and improving the skills, knowledge and positive attitude toward social and cultural society. The changes will involve the growth of personality, the actualization of themselves, development professionally improving the skills of the acquisition of knowledge as well as the development of creativity (Medelañonuevo, Ms. Carolyn, Ohsako, T. & Mauch, 2001). One of the primary domain in developing the professional teacher is to improve professional competence.

Competency improvement in the context of sustainable education throughout life is a comprehensive life experience that is continuously done formally or informally. The experience of living teachers is the structure of the perfect combination that built from the long process ability verbal, mastering arrogant and mastery of learning methods (Gagnon, 2002). The ongoing professional development process is not a natural process which is the routine, traditional and walks with itself. The ongoing professional development process requires strategic plans, clear and actual in a structured system in order to achieve the goal of better education (Easton, 2008). In actuality, the debate happened by dichotomizes pros and cons, in one side of the ongoing profession-al development became one of the savior of the improvement of the quality of education but in the other hand, had been heavily criticized also emerged. In general, the process of

sustainable professional de-velopment is one activity which fragmented, is cherent that 'decontextualized' and isolated from the situation real class (Ball & Cohen, 1999; Ono & Ferreira, n.d; Desley Hargreaves, 2000; Villegas-Reimers, 2003)

3. Methodology

The main objectives of the methodology this research is to identify the influence of competency im-provement and self-efficacy level professional teachers against the formation of a professional teacher identity. Distribution based on the type of research, this research including descriptive and verification namely gain a comprehensive research variable characteristics and measure the relationship between the variables through the hypothesis test procedure. The method developed is quantitatively related to the social issues or human done based on testing the theory that consists of the variables and measured with numbers and through the procedures of statistical analysis in order to discover whether the predictive generalizations of the theory is really. The population of this research is SMK teachers with expertise of power electricity field that has obtained a certificate of professional the expertise and located in the area of West Java. Based on the main data SMK, the number of SMK in the field of the expertise of power electricity in West Java 106 SMK that consists of 30 smk and 76 SMK Private (Data Subject SMK: 2014). When the assumption of the amount of SMK teachers each school that has got the professional certificate is ten people then the population number is 765.

4. Result and Discussion

Based on research towards 120 vocational school teachers across West Java, resulting in increment of every competencies enhancement variables as following:

4.1 Academic and Skills Competencies Enhancements

Academic and Skills Competencies Enhancements variable measure results have 13 indicators with percentage variations showing enhanced competencies of vocational school teachers.

Table 2. Academic and Skills Competencies Enhancements

No	Competencies	Percentage
1	Learning material training	58.33%
2	Workshop involvements	69.83%
3	Focus group discussion (FGD) activities	62.33%
4	'Inhouse training' involvements	71.67%
5	Simulation / software skills enhancement training	58.33%
6	Journal / Scientific paper writing skill enhancements	54.83%
7	Empiric practice mastery by industrial internship	51.33%
8	Comparative study via industry visits	62.83%
9	Classroom action researches	69.17%
10	Industrial 'on job training' involvements	43.00%
11	Practical competencies training	61.00%
12	'Training needs assessment' program	51.67%
13	Job sheet writing and developments	63.78%

Table 2 shows the variable indicator improvement of academic competence and skills namely profes-sional vocational teacher's activities in the improvement of academic competence and skills. On this indicator the highest achievements related to the activities of SMK teachers who follow the training 'Inhouse Training' of 71,67%. Massive quantity value shows that the SMK teachers more follow the activities held in schools by inviting various resource persons from outside the especially industry. The lowest indicator achievements there on the sub an internship in the industry of 51,33%. This figure is worrying because vocational teachers are very few who have an internship in the industry relevant with having the skills.

4.2 Profile of Pedagogic Competency Improvement

Measurement results variables competency improvement pedagogic skills which include training indica-tor mastery learning methodology, strengthening the facilitator and mentor in the Focus Group

Discussion (FGD), increased mastery of writing skills and material content development training learning model. Four profile measurement results the indicator can be checked on table 3.

Table 3. Pedagogic Competence Enhancements

No	Competencies	Percentages
1	Learning methodology training	62.83%
2	Facilitator and mentor in group activities	57.67%
3	Competence and learning material content development	74.50%
4	Learning model and process planning	84.00%
5	Innovative scientific work	60.00%
6	Classroom problem-solving studies	69.67%
7	Learning multimedia developments	66.30%
8	RPP and learning material reviews	83.60%

Table 3 shows gains variable indicator improvement of pedagogy competency. Model planning activities and learning process occupy the first rank of 84,00%. A large number that shows the SMK teachers are always doing the efforts to increase the mastery of models with the latest learning as part of the effort to the improvement of the learning process in the classroom or in the laboratory. While the lowest level obtained related to SMK teachers activities in the development of group activities only reach 57,67%. Collaboration between the teachers of a kind or one type lesson material substance has not become the main choice sustainable professional development.

4.3   Improving the Competence Personality Leadership

Competency Improvement personality leadership is part of the competency standard is required for a teacher professional. Personality competence related to personal capability in developing them comprehensively became a teacher. The measurement result variables competency improvement personality include leadership training activity indicator communication, training personality, formed atmosphere democratic class, training education psychology, construction of the student and religious activities in the school environment.

Table 4. Personality Competencies Enhancement

No	Competencies	Percentages
1	Public Communication skill	54.20%
2	Personality and mental enhancement training	78.00%
3	Psychology education concept mastery	79.67%
4	Democratized learning	52.00%
5	Student personality development and guidance	67.17%
6	Religious activity in school premise	70.00%

On table 4.3 seen explicitly that the efforts to increase the mastery of the concept psychology of education be accomplished indicator most high compared to other indicators of 79,67%. This shows that the vocational teachers have strong desire control aspects of the psychology of the students in the learning process. The contours of many psychology materials come into contact with the education concept seems to have attracted the interest of vocational teachers increase the mastery of the concept of psychology. Professional teachers have the assumption that the mastery of the concept of education, automatically have a comprehensive understanding of scholarly dimension psychology. Teachers amid the community considered figures that have the ability to more than any other profession that always believed to be the informal leaders. Informal leaders is not directly is a good example for the whole of the past generations. The indicator design builds democratic atmosphere in the classroom to reach a value of 79,67%, a value is high enough. Democratization indicator learns occupy the bottom ten rank reached the percentage of 52,00%. Professional vocational teachers not shifting toward attempting to build the atmosphere conducive learning, the persuasive and productive, so that the impact to instructional objectives that have been set. A good learning atmosphere will build a productive class community life, especially learned that focusing on the aspects of psychomotor is aspects.

4.4   Competency Improvement Ethno Pedagogic

Measurement results competency improvement ethno pedagogy that cover local cultural understanding indicator community, concept review the culture and improvement of the understanding of the appropriate technology skills and other variables can be checked on table 5.

Table 5. Ethno pedagogic Competence Enhancements

No	Competencies	Percentage
1	Past society base skills comprehension	64.17%
2	Cultural concept study activities	60.83%
3	Appropriate technology skills mastery	74.33%
4	Local cultural skill comprehension	74.83%
5	Cultural arts and technology development	54.33%
6	Comprehension on development of cultural community area	50.17%
7	Local cultural skill comprehension**	42.50%
8	Cultural art and technology development**	51.67%
9	Comprehension on development of cultural community area**	62.50%
10	Cultural study seminar	71.50%
11	Cultural art performances	69.17%
12	Cultural product comprehension	50.17%
13	Cultural process education	64.17%
14	Spiritual culture comprehension in learning process	60.83%
15	Ethnopedagogy deepening	74.33%

The research results show the competencies ethno pedagogy on the table 5 have achievement percentage indicator is very different. The measurement result indicators increased the understanding of the skills of the local cultural skills based on the culture and the understanding of the development of the local community to reach the highest number of 74,83% a significant number achievements. Job skills based on the local culture is closely related to the condition of the local culture that attention to environmental aspects of society, historical and social interaction. The indicator improvement activities mastery of the concept of the culture it is lower again only reach 42.50%. This figure shows the scientific activities SMK teachers professional on the material content with all aspects of the culture is still very less. The understanding that the social aspects of the culture has a strong correlation with the ability to teach and educate students in the learning process has not been internalized. The understanding of the concept of the culture of the society will provide a stronger learning nuance, different atmosphere of familiarity even though in the process of learning material content technology.

5.   Conclusion

Professional vocational teachers, in general, have been doing competency improvement activities the professionalism of teachers that includes academic and skills, personality, pedagogic skills and ethnopedagogy individually as well as institutional arrangements various structured training. The four competency improvement activities developed by the vocational education teacher quantitative and qualitative research has a significant contribution in the form of professional teacher identity profile competency improvement activities pedagogic skills, have the most influence and then followed by the competency improvement personality, increased competencies and academic skills and is competency improvement ethno pedagogy.

Academic competency improvement activities and skills, pedagogy, personality and ethno pedagogy need to be upgraded in a broader and more massive under the coordination of the relevant government agencies directly. The percentage of achievement of competency improvement activities conducted by SMK teacher's professional the average has not yet reached the value of the above 80%.

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