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The Optimization of the Vocational School Teacher Candidates' Employability Skills

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Abstract. The qualified teacher candidate of vocational schools (SMK) can be defined as individuals who have met the demands of Vocational Schools and the industry, such as mastering the hard skills and employability skills. Employability skills are the basic skills of every worker in adapting to the workplace. The purpose of this study is to describe the employability skills which must be trained to the candidates of the vocational school teacher. The results of the study showed the description of the employability skills which must be trained to the candidates of the vocational school teacher including : 1) basic skills: communication skills, information management skills, problem solving skills; 2) self-management skills: skills to demonstrate positive attitudes and behavior, responsible skills, adaptive skills, continuous learning skills, working skills; and 3) team work skills: collaborating skills, skills to participate in a project or task.

Keyword (s): strategy, learning, developing *employability skills*, student vocational teacher candidates.

1. Introduction

The followings are two main competencies that vocational teacher candidates must have in vocational schools: 1) hard skill competency, the competency that corresponds to their respective areas of expertise; and 2) soft skill competency, general competency for the candidate teachers including mental aspects, which is identical to the employability skills competence.

Although competence and skills are complex and challenging to learn, the students don't develop it unless they are explicitly taught. Saavedra and Opfer (2012) stated that that complex competencies and skills must be developed in integration with learning process¹. Therefore, the authors are interested in



investigating the learning strategies to develop the employability skills of vocational school teacher candidate.

Trilling and Fadel (2009) showed that the graduates of high school, diploma and higher education lack of competences in these following aspects: (1) oral and written communication, (2) critical thinking and problem solving, (3) work ethics and professionalism, (4) team working and collaborating, (5) working in different groups, (6) using technology, and (7) project management and leadership².

Rasul, et. al. (2013), stated that many graduates of engineering faculties do not have employability skills³. On the other hand, the industry emphasizes great importance to interpersonal skills, thinking skills and personal qualities to be employed. Indicators such as work safety, integrity, customer service, creative / innovative thinking and problem solving, and sports leadership show the highest average scores. Overall, entrepreneurs from the manufacturing industry argue that the employability skills must be possessed by all graduates so that they can compete in the global market.

Wardani, et al. (2016) revealed that the development and competition of the industry increasingly demands that vocational school graduates to have hard skills and soft skills⁴. Mastery of hard skills has been performed in vocational schools. However, the soft skills (employability skills) are still not optimal. The results of several experts found the parameters of employability skills that affect employment readiness are as follows: communication, collaboration, learning, problem solving, positive behavior and habits, responsibilities, and adaptation.

2. Methods

There are two main objectives of this study; (1) developing of the students' employability skills and; (2) implementing employability skills in the learning process using the problem based learning model and scientific approach. Therefore, this study employed Research and Development (R & D) design. The implementation of learning process was conducted using Classroom Action Research (CAR) which consists of four components: (i) planning: the references of actions to be taken to improve or change employability skill aspect in the learning process; (ii) actions: the implementation of the planned action to improve or change employability skill aspect in the learning process, (iii) observing: observing the results or effects of actions carried out on students, and (iv) reflection: The researcher examined, observed and considered the results or effects of actions from various criteria. There were two types of data collected in this study. The first data was the observation data collected using observation sheet. The second data were collected using the employability skills questionnaire.

3. Results

The table 1 presents employability skills of the teacher candidates students consist of (1) the existing condition of students' employability skills, and (2) students' employability skills after the implementation of the problem based learning model and scientific approach. Table 2 presents the self-management skills. Table 3 shows the teamwork skill.

Table 1. The employability skills of the students

No.	Subparameter	employability skills components	employability skills Score	
			Existing (%)	After treatment (%)
1	Communication skills	Read and understand various information (written, graphs, pictures)	73	78

		Have a good verbal communication	75	81
		Have a good written communication	80	80
		Listen to the opinions of others and ask questions	75	80
2	Information management skills	Find, organize and save information using the right technology	73	79
		Assess and apply various knowledge and skills to support their task completion	81	81
3	Problem solving skills	Analyze the problem	79	80
		Identify the cause of the problem	83	83
Average score			77,375	80.25

Table 2. The employability skills in self-management

No.	Subparameter	employability skills components	employability skills Score	
			existing (%)	After treatment (%)
1.	positive attitude skills	Tolerating differences	80	80
2.	having responsibility skills	Planning and managing time in work	79	81
3.	Adapting skills	Being able to work independently or team	80	80
4.	Continuous learning skills	Accessing various sources for the purpose of learning	80	87
5.	occupational health and safety Skills	Carry out occupational health and safety	81	85
		Work according to SOP	78	82
		Using personal protective equipment (PPE) according to its function	80	87
Average score			79.71	83.14

Table 3. The employability skills in teamwork

No.	Subparameter	employability skills components	The employability skills score	
			Existing (%)	After treatment (%)
1	Skills in working with others on the team	Work in group dynamics	81	83
		Being flexible, respecting, and supporting the contributions of others in the group	83	83
2	Skills to participate in an	Choosing and using the appropriate equipment and technology to do the	81	83

	assignment	task		
Average score			81.67	83

4. Discussion

Three main elements in employability skills are as follows: (1) fundamentals skills, which include: communication skills, information management skills, mathematical skills and problem-solving skills, (2) personal management skills which include: skills in a positive attitude and behavior, responsibility skills, adaptation skills, continuous learning skills and occupational health and safety skills, and (3) *teamwork skills* including: skills to work with others in the team and skills to participate in projects or assignments^{5,6}. These skills can be developed in learning process, as revealed by Sunardi, et al: (2016), that the implementation of a scientific approach contributes significantly to the vocational school students' employability skills⁷. In addition, the management of learning practices also plays an important role in increasing the learning outcome for the students⁸.

Based on the data in table 1 about the fundamental skills, table 2 about self-management skills, and table 3 about teamwork, the score of the students' employability skills after the implementation of problem – based learning with scientific approach increase by: 3.71 %, 4.30%, 1.63%.

Increasing the students' employability skills requires the educational institution to provide facilities and supporting facilities, the involvement of teaching staff to convey and provide experience of all elements of employability skills in the learning process. The limited equipment and materials can be solved by increasing the collaboration between educational institutions with industry⁹. Furthermore, the effectiveness of the development of employability skills depends on its development in the learning process and the readiness of the students.

The lecturers are expected to be able to design learning process as an effort to develop cognitive skills, technical skills, and soft skills in the form of employability skills simultaneously¹⁰. The lecturers must provide information about employability skills to produce vocational school teachers who have academic skills, technical skills, and employability skills. Fulfillment of these needs can be achieved by implementing a learning process that emphasizes the development of employability skills⁷. One of the learning approach which can develop the employability skills is the scientific approach with problem-based learning model. The atmosphere of the class and self-concept also contribute to improving the mastery of vocational competence and employability skills.

The reasons for the scientific approach to increase motivation and learning outcomes are (1) group work is conducted that the students feel more confident and comfortable; (2) stages of observing and inquiry drive

the students to be motivated and curious; (3) The stages of exploring or collecting information motivate the students to collect information in a group and discuss their ideas and experiences; (4) the stages of associating, provides opportunity for the students to expand information to reach for solutions from various sources; (5) The stage of communicating, students are trained to be able to convey learning outcomes in the form of reports and presentations; (6) the motivation of students in learning activities increase their learning outcomes.

5. Conclusion

Employability skills of the vocational teacher candidates can be improved by implementing scientific approach with problem-based learning model. The results of the study revealed the increase of employability skills included (1) basic skills, (2) self-management skills, and (3) team work skills are 3.71%, 4.30%, 1.63% respectively .

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