

Job Shadowing in Woodworking Engineering at Civil Engineering Department, Technical Faculty, Universitas Negeri Padang

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Abstract—This research was motivated by low of learning outcomes and lack of mastery of student life skills in Woodworking Engineering. The purpose of the study was to reveal the impact of Job Shadowing implementation in Woodworking Engineering subject to student learning outcomes and their life skills. The hypothesis was that there was a significant impact of Job Shadowing implementation to student learning outcomes and their life skills. This study was a quasi experimental research with Nonequivalent Control Group Design and conducted on Civil Engineering Department Technical Faculty, Universitas Negeri Padang. The sample was 32 students and were selected by random cluster sampling from the population of 64 students. Data were collected by using portfolio and observation. All data were analyzed by using SPSS 17th version. The findings, that the Job Shadowing implementation in Woodworking Engineering has gave a very significant improvement on the student's learning outcomes, and their life skills.

Keywords—*job shadowing; woodworking engineering; civil engineering department*

I. INTRODUCTION

Use Vocational education aimed is to prepare students to work at certain field [1]. Vocational education also aimed to enable students to deal with changes in society. Vocational education should be responsive to the changes in society. In this era of the rapid change of technology, vocational education must play many important roles in order to grab roles in the world of work [1].

A vocational education school supposed to provide students with knowledge and skill on work, and also responsible to the development and improvement of their career in the future. Vocational and Technological Education, instead of multi learning basis that is implied today, such as competence-based learning, problem-based learning, work based learning, etc, outcome-based learning should be improved too. The students not only fulfilled with work-competence, but also skills to develop their career in the future time.

D3 Civil Engineering Program, as one of study program at Civil Engineering Technical Faculty, Universitas Negeri

Padang aimed to produce vocational worker (D3) who will bridge the employees graduate from vocational high school and university students (bachelor degree).

Rekayasa Perakayuan is one of life skill lesson of D3 Civil Engineering, Technical Faculty, Universitas Negeri Padang which aimed to accomplish students with work competence of wood working (as a carpenter) and ability to improve themselves after finishing their education. But, it is not accomplish completely.

Early survey shows that in the last three year there is only a little improvement on students achievement in *Rekayasa Perakayuan*. Moreover, most of the students achieve grade "B", as the effect, students' cumulative achievement index is low.

Survey also shows that mastery of life skill is not really satisfied. It is indicated by the low of ability to cooperate, lack of responsibility and adaptation, also low ability of peer interaction, etc.

The main problem that should be focused on in order to improve students' achievement, also mastery of life skill, is learning strategy. Learning strategy of *Rekayasa Perakayuan* on the Civil Engineering Technical Faculty, Universitas Negeri Padang should be improved.

According to the problem mentioned above, below are some research objectives:

- To reveal the impact of job shadowing implementation on woodworking engineering to the learning outcomes improvement of D3 Civil Engineering Students, Technical Faculty, Universitas Negeri Padang.
- To reveal the impact of Job Shadowing implementation on woodworking engineering to the life skill improvement of D3 Civil Engineering Students, Technical Faculty, Universitas Negeri Padang.

II. LITERATURE REVIEW

Instructional process is an important component of education situation. Education effort will never exist without learning process. Without learning process education can not

take place. Good learning process will result in good education, otherwise. Therefore, a professional educator should understand on how to design and hold a proper learning [2].

Learning outcomes is a life skill, value, and behavior or attitude reflected by the students. Bloom, according to his very famous theory classified ability or learning outcomes competence into three categories, cognitive ability, affective ability and psychomotoric ability which are related on one another [3].

Cognitive ability related with intellectual ability, that is students' knowledge and understanding on concept or knowledge principles. Based on hierarchy, cognitive ability consist of 1) knowledge, 2) comprehension, 3) application, 4) analysis, 5) synthesis, dan 6) evaluation. Thus, can be reached by thinking process. The higher someone thinking, the higher the cognitive ability will be.

Affective ability related with attention, interest and attitude. Those will influence students in accepting, responding, judging or organizing something. Psychomotoric ability related with body movement, such as, skill and ability to respond the object being learned. Psychomotoric ability has four indicators, they are: 1) moving, 2) manipulating, 3) communicating, and 4) creating.

A student's learning outcomes influence by both internal and external factors. The internal factors come from the inner side, such as: intelligency, interest and talent, internal learning motivation, physical, and psychology, meanwhile the external factors are: teacher/lecturer, school environment, family and society.

It can be concluded that learning outcomes is the change of attitude as the result of learning process. The change it self, involves three areas, cognitive, affective and psychomotoric.

Generally, the assessment learning outcomes aimed at: 1) knowing the progress of students' learning, 2) knowing the level of students's success, as a consideration to assure whether they are success or not in their learning process and 3) knowing the students' competency mastery as a consideration to assure whether the basic competency can be gained or not.

Life skill divided into two, first, generic life skill, that is to develop self potency and skill to work at certain field, and usually they can earn a living by using specific life skill. Generic life skill involves: self awareness and self potencies, self thinking, and social skill. Specific skill involves: academic skills and vocational skill.

Life skill education should be a focus in all level of education. Life skill education involves personal skill, social skill, academic skill and vocational skill. Therefore, both formal and informal school should improve learning with life skill orientation.

Life skill education helps the individual to improve the decision making skill, ability to take everything in the right sense and also improve their contributions to the society [4].

Life skill education is important to improve self concept. The main objective of life skill education is to enable the learner to develop a concept of oneself as a person of worth

and dignity. It should help one to understand oneself and lead to growth in personal responsibility [4].

It will help the young people to empower in challenging situations. Various skills like leadership, responsibility, communication, intellectual capacity, self esteem, Interpersonal skill etc. extends its maximum level, if it is practicing effectively among the youth [4].

Learning is an interaction process between students and teachers which can encourage them to learn actively, participatively, interactively by using method, strategy or approach, tool/media, and suitable learning environment [5].

It can be concluded that, learning is a procedure or steps applied by teacher to facilitate students to learn actively, participatively, and interactively, in order to reach the education objective, that is optimum students' self potency improvement.

Job Shadowing, as a part of Work-Based Learning strategy, is a strategy to link students directly with the workplace in the real world.

Job Shadowing means instructional programs that deliberately use the workplace as a site for student learning. The Job Shadowing programs are formal, structured, and strategically organized by instructional staff, employers, and sometimes other groups to link learning in the workplace to students' college-based learning experiences. Job Shadowing programs have formal instructional plans that directly relate students' worksite learning activities to their career goals. These experiences are usually but not always college-credit generating [6]. Job Shadowing is also effective for college and high school students who may want to test their interest in a career by finding out what happens in a particular job day-by-day. A job shadowing employee can attend meetings, participate in brainstorming sessions, take notes during planning sessions, debrief job candidates, and participate in a variety of non-confidential activities [7].

It can be understood that, the job shadowing useful in order to improve students motivation to increase achievement, personal competency, social life skill, and understanding of workplace.

Job Shadowing, sometimes known as practice-based learning is an important part of higher education curriculum. It can encourage students' self development as well as professionalism. Therefore, they would be ready to enter workplace.

III. RESEARCH METHODOLOGY

Research design was a quasi experimental design, due to the researcher can not control totally the variables which influence research finding, such as experimental group and controlled group. Both of them can not be set similarly.

In this case, the implementation of work-based learning was by using job shadowing, which integrates job visit and job experience.

The place of research was at Civil Engineering, Technical Faculty, Universitas Negeri Padang, and the place for job

shadowing was at “*Pondok Kopi*” wood construction company in Jalan Pondok Kopi, Siteba, Padang.

The population is all students of D3 Civil Engineering, Technical Faculty, Universitas Negeri Padang. All participants engaged in this research were all in the second semester, totally 64 students, divided into four classes. (see table 1 below).

TABLE I. RESEARCH POPULATION

No	Lecturing Group	Amount	Boldness
01	Reguler I	16 students	
02	Reguler II	16 students	
03	Independent Regular I	16 students	
04	Independent Regular II	16 students	
Total		64 students	

The sample were taken using cluster random sampling, since there is no any new class making. Two groups of regular students were choosen, section 85680 and section 85680. Total of them consisted of 32 students.

T-test used to test the hypothesis, as follow:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{\sum X_1^2 - \frac{(\sum X_1)^2}{n_1} + \sum X_2^2 - \frac{(\sum X_2)^2}{n_2}}{n_1 + n_2 - 2}} \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}$$

IV. RESULT AND DISCUSSION

A. The Impact of Job Shadowing to Increase the Achievement

Research shows that there exist difference on mean data gain score of woodworking engineering between group of students who impelement job shadowing and group of students who apply conventional learning in a significant level.

It means that the implementation of job shadowing in woodworking engineering can increase students achievement. It reveals that gain score of students’ group who use job shadowing is higher than the achievement of group of students who implement conventional learning.

This reseach finding also similar with other research findings by Rochtaniawati [8], Liunir, et al [9], Tri [10], Mallika [11], Thomas and Donna [12], Andrew and McCaslin [13]. They concludes that work-based learning can increase learning outcomes or students’ achievement.

Finally, this reseach finding, which states that job shadowing can improve learning outcomes, supported by learning theories and related findings.

B. The Impact of Work-Based Learning to Life Skill Mastery

The finding is there exist a gap between life skill mastery among groups of students who implement job shadowing and students who apply conventional learning in a significant level.

It can be seen that the implementation of job shadowing in woodworking engineering can increase students’ life skill. Next, it can also be seen that life skill mastery improvement of group of students who use job shadowing is much higher than the group of students using conventional learning.

The implementation of job shadowing can build students’ positive attitude and behavior, that enable students to adapt with workplace, especially with other workers come from different backgrounds. In addition, it also build positive attitude to deal effectively with demands and challenges every day life.

Job shadowing can also encompasses thinking skill, social skill, and negotiation skill with other people. Finally, job shadowing can help students to grow and develop into well behaved adults.

Basically, job shadowing is a contextual learning aimed to enable students to develop their potency.

Contextual learning is a learning which links learning material with the real world context faced by students in every day life, in family, society, nature, as well as work place, so that they can use knowledge they have and know how to impelement it in every day [14].

The contextual core part of work-based learning is the involvement of constructivism, questioning, inquiry, learning community, modelling, reflection, and authentic assessment.

This research finding also related with Rochtaniawati [8], Liunir, et al [9], Tri [10], Mallika [11], Thomas and Donna [12], Andrew and McCaslin [13]. They concluded that work based learning can increase life skill.

It can be concluded that, job shadowing can be implemented in woodworking engineering in order to improve students’ life skill mastery.

V. CONCLUSION AND IMPLICATION

- Job Shadowing implementation in Woodworking Engineering can improve students learning outcomes or achievement.
- Job Shadowing implementation in woodworking engineering can improve students’ life skill mastery.

It can be concluded that job shadowing contributes positive effect on students’ improvement of learning outcomes and life skill. The finding implication is job shadowing in Woodworking Engineering of D3 Civil Engineering, Technical Faculty, Universitas Negeri Padang should always improved in the next future time, in order to increase students’ achievement and life skill.

Job shadowing approach as what mentioned above can also applied at campus, on condition, there should be an active production unit.

Job shadowing need support of industrial or workplace support. Through cooperation forum between Technical Faculty, Universitas Negeri Padang and woodworking industries which located around campus area is useful to

provide the students the place to do woodworking engineering practices.

VI. SUGGESTION

Below are some suggestions based on the above research conclusion and implication:

- The education practitioners/the experts, especially on vocational part, should allow the socialization of the Job Shadowing implementation on Woodworking Engineering, in order to improve students' achievement and their life skills.
- The head master of Civil Engineering Department of Technical Faculty, Universitas Negeri Padang should accomplished facilities of Woodworking Engineering, therefore lecturer or instructor can implement the Job Shadowing in better way in order to increase students learning outcomes and their life skills.
- The head master of Civil Engineering Department of Technical Faculty, Universitas Negeri Padang should improve the settled cooperation by forming cooperation forum with the woodworking industries in Padang City in order to find working practice places in order to implement the Job Shadowing, especially in Woodworking Engineering.
- The head master of Civil Engineering Department of Technical Faculty, Universitas Negeri Padang should empower the production unit of construction laboratory, especially at Woodworking Engineering Workshop, so that it can be a place for students to practice Job Shadowing. The industry unit can also collect all students' best product of woodworking engineering then distribute it to the consumer. Finally, it is effectively decrease cost needed in Woodworking Engineering.
- In order to increase students' learning outcomes and their life skill, lecturer/instructor who responsible for Woodworking Engineering at Civil Engineering, Technical Faculty, Universitas Negeri Padang, should implement this Job Shadowing approach, which integrates job visit and job experience.
- Woodworking industries, especially in Padang City should be more opened in developing the settled cooperation with relevant vocational education institutions, especially Civil Engineering, Technical

Faculty, Universitas Negeri Padang, as a part of their social responsibility on our nation human resources development.

There should be a research follow up about the Job Shadowing implementation for other vocational lessons or on how to implement it using another approaches.

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