

Effectiveness of Fieldwork Practice Implementation at Engineering Faculty of Unimed in RI 4.0

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Abstract. This study aims to determine the effectiveness of the implementation of fieldwork practices (FWP) at the Engineering Faculty (EF) of Unimed, by technological developments and facing RI 4.0. The effectiveness of the implementation FWP, in terms of the process FWP activities, is while students practice in the business and industrial world (BIW). The subjects of this study were EF Unimed students who consisted of several study programs at EF Unimed. Purposive sampling is done for students who have implemented FWP for each study program. The aspects examined in this paper include students' understanding of the world of work, competencies, student professional attitudes, and the role of lecturers and FWP supervisors. Data collection techniques were carried out using questionnaires and interviews. The data analysis technique was done descriptively. The results showed that after FWP, EF Unimed students experienced, namely: 1) increasing students' understanding of the world of work, 2) increasing professional skills of FWP students, 3) increasing awareness of EF Unimed student attitudes, and 4) the role of FWP supervisors and lecturers in assessing quite optimal in forming professional students. These results indicate that the implementation of street vendors at EF Unimed still needs attention to prepare graduates who are more competent in facing RI 4.0.

Keywords: vocational education, FWP, the world of work, competence.

1. Preliminary

Vocational education has a mission of preparing a generation that is ready to work and professionally. Based on Law of the National Education System, there are two levels of vocational education, namely senior vocational education and higher vocational education. One of the higher vocational education institutions in Medan is the Faculty of Engineering Unimed. The mission of vocational education is to produce human resources with certain competencies and the appropriate amount needed. Vocational education graduates are expected to have: (1) knowledge and skills according to their profession (2) social competence to carry out professional practice, (3) ability to work effectively, and (4) enthusiasm to continue learning to improve their professional skills and knowledge[1].

In order to prepare vocational education graduates who are ready to work, one of the compulsory courses in every study program at EF Unimed is the Fieldwork Practice (FWP). FWP aim at bridge the theoretical material obtained on the lecture bench with the practice carried out in the field. The purpose of the FWP is an effort to equip students of field experience

as a form of practical learning outside the classroom and laboratory. Through the implementation of FWP, students are expected to understand the ins and outs of problems in the field and be able to provide alternative solutions to solve them. Furthermore through FWP students have real experience with all types of work and obstacles in employment.

The reality that is often found in employment is that workers are fired because they are less skilled at work, lazy, careless, dishonest, lacking in discipline, and so on. FWP is given by students to anticipate that prospective graduates understand various problems in the workforce and anticipate dismissal at work. One of the goals of street vendors is to improve their skills according to their area of expertise so they become professional. A profession is a position or occupation that demands special expertise and ethics and service standards. Professional is the nature of something relating to the profession, appearance in carrying out the position in accordance with the demands of the profession or people who have the ability in accordance with the demands of the profession.

Implementation of FWP at EF Unimed, involved companies where the practice taken at business and industrial world (BIW). The implementation of FWP needs to be evaluated whether it is effective or not. This is done because street vendors are activities that aim to improve knowledge, skills, and attitudes. FWP assessment given by FWP field supervisors and FWP supervisors, but it has not been revealed about the achievement of competencies in terms of the perceptions of students who implement FWP. This assessment is important for students who will pursue their next career, for FWP supervisors to find out whether or not optimal in carrying out their role as supervisors. For institutions, it will be very important because it is used to take policies in the implementation of FWP that include the preparation stage on campus, and the implementation in FWP, supervisor of FWP.

Dika Ayu A and Ali Wafa (2016), found that the obstacles in the implementation of street vendors are: lack of supplies or orientation, administrative constraints, difficulty in finding agencies, and inaccurate reasons for choosing agencies[2]. Problems faced by students in the implementation of street vendors are there is no clear work schedule, the work is not as expected, the lack of the role of the supervisor. Problems after the implementation of street vendors are guidelines for the preparation of the final report are unclear, students do not prepare a synthesis of the problem, and no performance/competency test is carried out.

The main problem in this research is that FWP is very important to improve the quality of graduates, but the effectiveness of the implementation has never been seen which includes preparation and implementation. Besides, because FWP is a program that will always be implemented it is necessary to review the level of achievement. Through this paper, it will be revealed how the effectiveness of FWP implementation in EF Unimed is based on students' understanding of the world of work, skills and professional attitudes, the role of FWP supervisors in the field or the role of FWP supervisors.

Catur A and Bambang S (2016) stated that fieldwork activities are quality control of students, whether they have met the competencies required for employment, whether they have met the principle of linkage and accuracy (link and match) of their programs with industry[3].

To find out the effectiveness of FWP, it can be done through evaluation. Demands for evaluating are needed, especially in vocational education. So it is not only student activities that are evaluated but also the activities of educators and educational institutions. One important component in planning a program is to state in advance its objectives, both general goals and desired specific goals[4].

Effectiveness related to the achievement of objectives, in this case, the objectives expected by the implementation of FWP. FWP are said to be effective if they can achieve the goals set out in the curriculum. The purposes of FWP are: 1) to provide students with a real understanding

of the world of work, 2) improve student skills, 3) grow and increase awareness of professional attitudes of students as prospective professional workers, and 4) Carry out work assignments following their profession/field.

To achieve this goal is influenced by internal factors originating from students and external factors that exist outside of students. Factors originating from within students include intelligence, talents, interests, attitudes and so on. Factors originating from outside students are the support of street vendors, supervisors, supervisors in the field, employees in the street vendors, work environment, and fellow FWP[5].

Information about the world of work is an illustration that must be understood by FWP students in their fields. The world of work is a description of the form/type of work that workers do to produce a product. For FWP students, it is necessary to understand the world of work including (1) Types of jobs in their environment, (2) Types of jobs that graduates can enter according to their fields, (3) Benefits derived from each job, (4) Knowledge, skills, and skills needed for each job, (5) Conditions and future in an occupation, and (6) Specific requirements for an occupation.

Students who carry out street vendors understand better the work, so they have more adequate information about the work environment. Students who have information about the world of work will be able to make more appropriate choices in choosing the type of work. When students implement street vendors interact a lot of students with employees to obtain information about the types and various motivations of people working. Thus students will have knowledge and understanding of the world of work. This fosters students' professional attitudes in search of knowledge and work attitudes.

Professional is the appearance of workers in carrying out something following the demands of the profession/job. Students who carry out FWP will have the ability following the demands of the profession according to their fields. Student professional competence shows mastery of knowledge, attitudes, and skills that are in accordance with what is needed in the workforce. Personal competence/personality is the most important factor in the personal formation of a student being a professional. Personal competence needs attention because it requires a relatively long time to form these personal competencies.

Skills are a follow-up of understanding and attitude. To improve skills in their fields, students need to be given the material in the form of self-understanding, values, environmental understanding, and future planning. Some characteristics of skilled students include: 1) immediately carry out the work, 2) carry out the work carefully, 3) polite and friendly with other parties, 4) always looking for work-related information, and 5) self-training. In general student, skills will improve if allowed to practice. FWP will be said to be successful if students experience an increase in understanding of the world of work, skills, and awareness of professional attitudes[6].

2. Research Method

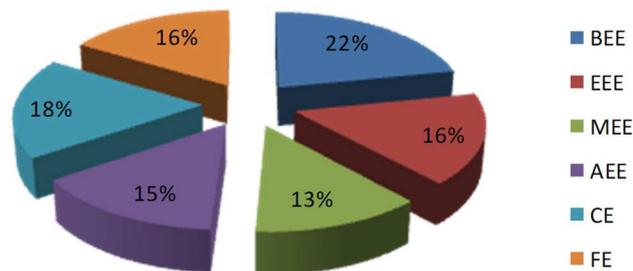
This research was conducted at FT Unimed and the BIW. This research was conducted in May - October 2019. This type of research is including evaluative descriptive research[7]. The data to be obtained in this study are in the form of qualitative and quantitative data. Qualitative data in the form of information about the understanding of the world of work according to their fields, skills or competencies obtained students' professional attitude in practice, the role of lecturers and FWP supervisors in shaping students in the implementation of street vendors.

Quantitative data in the form of descriptive information is about the administration system and assessment of students' competencies in the implementation of street vendors.

The subjects and sources of data in this study were FWP, lecturers, and street vendors. To obtain data from research subjects, data collection tools such as questionnaires and interview sheets were used. Interviews were conducted with lecturers and PKL supervisors while questionnaires were given to students. The data analysis model in this study follows the concept given[8] by Lodico, Spaulding, & Voegtle. Based on the data analysis model, this research uses the following stages of data analysis: 1) organizing the data and examining the data carefully, 2) re-checking the data, 3) carrying out further data processing. Researchers describe, summarize, and organize coding that contains categories that are more specific and differentiated from other categories, 4) conduct a final analysis, make interpretations and conclusions containing the results of research findings.

3. Results and Discussion

The source of data in this study is students who carry out street vendors in every study program at FT Unimed. Student data obtained as many as 55 people from 6 study programs with the proportions as presented in the following figure



Data obtained from instruments filled in by students about EF Unimed students' understanding of the world of work as shown in Figure 2. Based on the questions presented about the understanding of the world of work after FWP, the lowest average score occurred in the Fashion Design study program and the highest occurred in the study program Building Engineering Education. But overall the average score of students' understanding of the world of work after FWP at EF Unimed was 3.24. This shows that the implementation of street vendors conducted in various businesses and industrial world brings increased understanding for EF Unimed students about the world of work that will be entered after the completion of street vendors. But quantitatively, it is still necessary to increase the understanding of FWP students about the real world of work through FWP. This can be done through locations and fields where street vendors are more tailored to the fields of each study program.

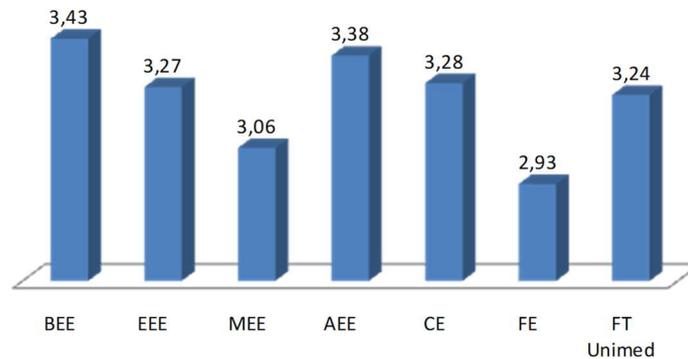


Fig 2. Average Understanding of Students About the World of Work After FWP

If further observed aspects of student understanding of the world of work that still needs to be improved are: 1) Information about work following their fields, 2) Information on future work, and 3) Work skills that must be possessed by students. These three aspects still need to be improved so that in choosing the type of work that will carry more choices. Several alternatives can improve students' understanding of the world of work, for example by organizing career guidance, so students can understand the types of jobs that exist in the community and the types of work entered after graduation. Besides, it can also increase the frequency of meeting practitioners so they can inform matters relating to the world of work information and skills that students must possess before entering the workforce.

Based on data from students about the skills possessed after implementing street vendors are presented in the following Table 1.

Table 1. Student Skills in Carrying Out PKL Activities

No	Prodi	Total Score	Average Score
1	PTB	263	3,13
2	PTE	186	2,95
3	PTM	160	3,27
4	PTO	175	3,13
5	T Boga	213	3,04
6	T Busana	202	3,21
7	FT Unimed	1199	3,11

Table 1 shows that the average score of skills possessed by students after FWP based on the type of work performed or observed, EF Unimed students obtained a score of 3.11. The results showed that EF Unimed students had skills after implementing FWP. When reviewed for each study program at EF Unimed, the highest score of skills after FWP namely Mechanical Engineering Education study program and the lowest average score is stated by the Electrical Engineering Education study program.

Skills scores that already show high scores occur in aspects of 1) consulting others who know better, 2) Finding information about the world of work, 3) trying to improve skills. While skills scores that need attention occur in aspects of 1) Achieve results by standards and 2)

Achieve quality following standards. This can be done through creative activities and problem solving with various cases according to their respective fields. This is done so students have the skills before graduating.

The results showed that the professional attitude of FWP students at EF Unimed had not shown good results. Based on Table 2, shows that FWP students of the Automotive Engineering Study Program have the highest average professional scores with a score of 3.19. The lowest average score obtained by student of Building Engineering Education with score of 2.78. In general, EF Unimed students have a professional attitude with a score of 2.94. This shows that the professional attitude of EF Unimed students still needs to get good attention so that EF graduate students can easily work through professional attitude.

Table 2. The Average Professional Attitudes Scores of FWP Students by Study Program

No	Prodi	Jumlah Resp	Jumlah Skor	Rerata Skor
1	PTB	12	200	2,78
2	PTE	9	151	2,80
3	PTM	7	129	3,07
4	PTO	8	153	3,19
5	T Boga	10	180	3,00
6	T Busana	9	158	2,93
7	FT Unimed	55	971	2,94

Qualitatively, EF Unimed students after joining FWP stated that awareness about professional attitudes tended to increase. This is a result of students having experienced conditions and conditions of employment. Based on the results of the analysis shows that professional attitudes that still need to be improved for EF Unimed students, namely: 1) Difficulties to explore the fields of study related to the profession, and 2) attitude of devotion. One effort that can be used to improve this attitude is through cooperation with career guidance. So in learning on campus, it is necessary to develop cooperation between students and provide career guidance according to their respective fields.

In the implementation of street vendors conducted by EF Unimed students, it shows that the role of field supervisors and report supervisors has not yet maximally contributed to improving students' competencies and attitudes. Quantitatively, the average score of the role of supervisors and lecturers of FWP students in each study program is presented in Figure 3.

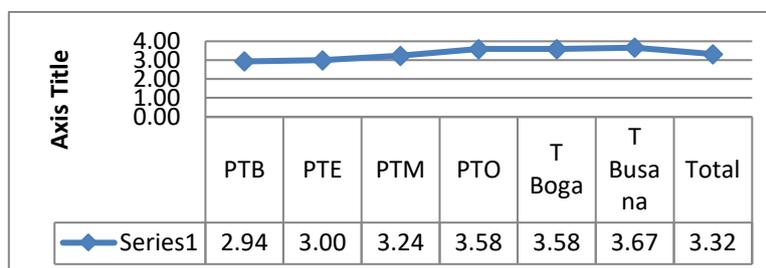


Fig 3. Average Role of PKL Supervisors and Lecturers

The implementation of the FWP guidance process at EF Unimed has not taken place maximally. From the data in Figure 3, the average score of the guidance process by FWP supervisors and lecturers is at the BEE study program with a score of 2.94 and the highest is on the Fashion study program with a score of 3.67. When seen the average process of guiding the implementation of FWP conducted field supervisors and lecturers FWP at EF Unimed with a score of 3.32. The aspects measured in the process of mentoring FWP include: 1) compilation of activity schedules, 2) compiling a description of the task or focus of the report, 3) the process of writing report guidance, 4) monitoring / reviewing the implementation of FWP in the world of work, 5) checking and writing daily notes in the FWP process, and 6) the process of assigning FWP values.

From the aspect of FWP guidance, the maximum score occurs in the process of giving FWP scores. Grading of FWP has a standardized format consisting of evaluation of reports and assessment of mastery implementation of FWP. Components assessed in FWP reports include title and theory, report content, systematic writing, and FWP administration. While the display component (mastery) assessed includes: presentation (presentation material), mastery of the contents of the report and attitude in the exam. For other aspects of FWP guidance, they still need improvement and improvement. If this guidance aspect is not heeded, it is possible to achieve the goals of street vendors less than the maximum. While the improvement process carried out by the supervisors before the implementation of FWP is on aspects of: 1) briefing before FWP, 2) submission of students to the FWP, 3) coming to the field and guiding when field, 4) withdrawal of FWP students, and 5) field supervisors participate in guiding FWP reports.

From various aspects carried out in the implementation of FWP, the role of a supervisor is very large to achieve the goals of FWP. Various reasons have resulted in the supervisor not playing an optimal role in the guidance of FWP, namely: busyness on campus, the implementation of FWP outside the city, the time of submission and withdrawal of FWP students together with other activities. From the results of the study, it shows that the implementation of FWP at EF Unimed can improve: 1) Student awareness of the world of work in the form of an overall understanding of the world of work and its benefits, as well as their meaning for life. 2) Self-awareness of personal needs, strengths and weaknesses, and other potential. 3) Appreciation and attitude, in the form of a value system towards work and how it plays a role. This appreciation and attitude are developed through education that will result in self and social satisfaction. This self and social satisfaction occur as a result of the internalization of values and the role of work that can simultaneously lead to activities and satisfaction in working in the community. 4) Decision-making ability, towards the decision-making, including covering alternative identification, choosing alternatives and implementing alternatives. 5) Awareness of work skills and initial competence, in the form of cognitive skills required in identifying the objectives of a task, task procedures, carrying out tasks and conducting evaluations, 6) Work skills are various forms of skills required to be able to directly perform various tasks appropriately, and 7) education awareness, a form of introduction from students about the meaning of the development of basic skills and mastery of knowledge in achieving goals through education.

4. Conclusion

Based on the results and discussion in this research, several conclusions can be drawn as follows: 1) students' understanding of the world of work after implementing FWP is quite good. Students who carry out street vendors stated that FWP greatly enhance understanding of the world of work, 2) Student skills improved by following FWP, skills gained in the field of employment when FWP in accordance with their respective fields, 3) Increased student professional attitude after implementing FWP, professional attitudes this includes discipline, collaboration, and creative in solving problems in work, 4) FWP advisors in the field show a positive role in improving students' professional skills, because most FWP supervisors in the field guide the preparation of FWP activity schedules, guide student activities during FWP, oversee implementation FWP, and check the daily FWP records of students.

5. References

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