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Relevance of Employability Skills of Informatics Education Students to the Business and Industrial Sector

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This research aims to determine the relevance of employability skills of Informatics Education students to the needs of the business and industries in Informatics in Malang City; this is based on the industrial practice of the Informatics Education Program (IEP) at the State University of Malang (UM). The technique of collecting data was using questionnaires intended for 55 students of Informatics Education Program which has implemented Industrial Practice, and nine businesses and industries consisting of 40 respondents, using purposive sampling. A questionnaire used to determine the level of relevance of employability skills of Informatics Education students who have applied in business and industry. The results of the questionnaire showed the relevance of employability skills of students of the Informatics Education Program with the needs of business and industry in the high category.

Keywords: relevance, employability skills, informatics education

INTRODUCTION

Education is a learning experience that takes place in every neighbourhood, in which all life and all life situations affect the growth of the individual (Mudyahardjo, 2001: 3). Therefore, education is very influential on people in order to become a good human being in person, character and potential. The Act on the National Education System 20 of 2003 in Article 1 (1) states that education is a conscious and deliberate effort to create an atmosphere of learning and the learning process so that learners are actively developing the potential for him or her to have the spiritual power of religion, self-control, personality, intelligence, noble character, and skills needed by him/her, society, nation and state.

State University of Malang (UM) is a higher education institution within the Ministry of Education and Culture, under the guidance of the Directorate General of Higher Education, located in the city of Malang and Blitar, East Java. This provides education and training in science and technology that are expected to produce graduates who are skilled, professional, and reliable to work in the fields. One department is the Department of Electrical Engineering. The Department of Electrical Engineering is within the Faculty of Engineering which organises academic education in electrical engineering and has six courses. One study program is the Informatics Education Program (IEP). IEP graduates prepared for work in the field of education and non-educational (industry). Efforts are underway to prepare graduates who are ready to work in the field of non-educational (industry) with the presence of the Industrial Practice program.

Industrial Practice is one of the subjects included in the non-educational field experience program, and is a student learning activity conducted in a company or industry under the guidance and expertise, integrated in a field of study as a vehicle for the establishment of academic ability (profession). The purpose of the Industrial Practice is to train students to work in industrial practices (Curriculum IEP, 2014). In addition to train in working in industry, Industrial Practice is also designed to help students improve competence in their respective fields, in this case in accordance with the competence of expertise possessed by students of the IEP. IEP student competency skills can be divided into three (3) areas of expertise, namely: (1) software engineering (SE); (2) Multimedia; (3) Mechanical computers and networks.

In the implementation of the Industrial Practice, Informatics Education students are required to have specific skills to support their work in the industrialised world. One must possess the ability of employability skills. Employability skills are the competencies of a non-technical person has, to be able to participate in the workplace. There are eight components of the existing competence in the employability skills according to the Department of Education and Training: (1) communication *skills;* (2) teamwork *skills;* (3) problem solving *skills;* (4) initiative and enterprise *skills;* (5) planning and organising *skills;* (6) self-management *skills;* (7) learning *skills;* (8) technology *skills;* business and industries in finding workers also have certain criteria. Not only is technical competence needed, but non-technical competencies are also needed. One of them is employability skills. Thus, it is proper that the students have employability skills in order to create comfort and relevance in work. Relevance between employability skills possessed by the Informatics Education students, needs business and industry and reflects the relevance of the industrial world with the world of education. It also reflects the deepening of the competence level of employability skills possessed by Informatics Education students.

Formulation of the problem

1. What is the level of application of the employability skills Informatics Education Program students at business and industry?
2. What is the relevance level of employability skills Informatics Education Program student with business and industrial needs ?

Operational definitions

Employablity *skills*

The competencies of a non-technical person has to be able to participate in the workplace.

Student of Informatics Education Program

An Informatics Education student is someone who is studying in courses in the Informatics Education Program Department of Electrical Engineering, Faculty of Engineering, State

University of Malang. IEP students are trained to be educators in the field of informatics engineering as well as in the industrialised world.

The needs of business and industrial

The needs of business and industry means the employability skills needed by business and industry related to Computer Science Education courses.

Population and sample

The population of the research object is business and industry, or place Industrial Practice students of Informatics education forces in the city of Malang. The sampling technique used was purposive sampling. Purposive sampling is a sampling technique with a certain consideration (Sugiyono, 2017: 68). Samples were taken by several criteria. Business and industry, which would be a sample, is to be taken by the criteria that is based on a textbook of professional ethics of information technology (Febriani, 2015). There are three (3) classifications of work in the field of information technology, namely: (1) the first category: the software industry; (2) The second category: industrial equipment (hardware); (3) The third category: the software industry; the fourth category: government agencies. So as to determine the sample in this study using the four (4) categories, 9 businesses and industries were used with a. total 40 respondents in the workplace and 55 students of IEP.

Data collection technique

Data collection techniques used were a questionnaire, interview and documentation study. Questionnaires were distributed to all workplace and students of IEP, according to the number of samples that have been determined to obtain data, related to the relevance of Informatics Education Curriculum, with the competencies needed by businesses and industries. Documents used were the Industrial Practice guidelines and curriculum IEP UM. Interviews were conducted to businesses and industries, student IEP UM, and the Coordinator of the Industrial Practice. Interviews with business and industry were conducted to determine the needs of related industries IEP UM, an interview to IEP students to investigate the implementation of related Industrial Practice competency skills, an interview to head of the IEP study program, to determine the competence of Industrial Practice in Curriculum Education Information Engineering.

Data analysis

The data used for the analysis of the implementation level of employability skills and also for the analysis of the relevance of employability skill level of the Informatics Education student needed businesses and industries. Percentage scores used the formula of Sudjana (2005: 50), and then the relevance of using a 3-level conversion categorisation based on the opinions Saifuddin Azwar (2015: 149), low, medium, and high were used. The categorisation of the interval ranged from 0% ≤ X <33.33% rate of low relevance, interval33.34% ≤ X <66.67% rate of moderate relevance, and 66.68% interval ≤ X <100% rate of high relevance.

Results and Discussion

Part 1: Employability skills Informatics Education that has been applied in businesses and industries.

The test results using the Kolmogorov Smirnov test, showed the sig> 0.05 and declared the normality assumption to be fulfilled. The level of implementation of employability skills of Informatics Education students, who have applied in business and industry, uses three categories based on the opinions Saifuddin Azwar (2015: 149), namely Low, Medium, and High. The result of the calculation was 75.5%, so the rate of implementation was high. The percentage rate of implementation of IEP UM student employability skills that have been applied in business and industry was based on four alternative answers as: not suitable, less suitable, appropriate, and very appropriate.

From the data obtained, employability skills Informatics Education students, who have applied in business and industry, amounted to 75.5%, so that the rate of implementation is high. So, students of Informatics Education have implemented the employability skills they have, when implementing Industrial Practice very well, because the level of application was in the high category. Then the percentage of Informatics Education Employability skills based on each item found that: 5% Not applicable 15% Less appropriate; 32% suitable, and 48% Very appropriate.

Part 2: The level of employability skills relevant to the needs of Information Engineering Education DU / DI

The test results using the Kolmogorov Smirnov test showed the sig> 0.05 and declared the normality assumption to be met. The level of Informatics Education curriculum relevance to the needs of businesses and industries used three categories based on the opinions Saifuddin Azwar (2015: 149), namely Low, Medium, and High. Relevance calculation results obtained 81.2%, so the rate of implementation I was high. Level of Informatics Education curriculum relevance to the needs of business and industry was based on four categories: not needed, less necessary, needed, and urgently needed. The 8 components of expertise student employability skills required by Informatics Education business and industry, are namely: communication skills, teamwork skills, problem-solving skills, initiative and enterprise skills, planning and organising skills, self-management skills, learning skills and technology skills.

From the data obtained, employability skill level of relevance to the needs of Informatics Education business and industry, amounted to 81.2%, so that the level of relevance is high. So, employability skills with the needs of Informatics Education business and industry is very appropriate for the level of relevance in the high category. Then, in regard to the percentage of Informatics Education Employability skills needed by businesses and industries based on each item, found that 4% is not required by business and industry, 14% less required, 35% needed and 47% with a great need. The high level of relevance obtained has thus been able to link and match well, and can raise the confidence of students to the next level.

Conclusion

Employability skills Informatics Education students who have applied in business and industry amounted to 75.5%, which is in the high category. Furthermore, to the level of employability skills of relevance to the needs of Informatics Education business and industry, amounted to 81.2%, which is also in the high category.

Suggestion

Cooperation between education and industry is essential in order to establish the link and match, so that the students can have better employability skills to fit the needs of businesses

and industries. So, while in the industrialised world, students can feel the comfort and the suitability of the work.

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