JurnalMantik
Volume 4, Number 3, Nov 2020, pp. 1957-1961 E-ISSN 2685-4236
https://iocscience.org/ejournal/index.php/mantik

Perception of Entrepreneurs Concerning Employment Skills in Information and Communication Technology (ICT)

Angelia Maharani Purba[1], Miduk Purba[2],Arlina Pratiwi[3]

[1,2] Electrical Engineering, Politeknik Negeri Medan, Almamater No. 1, Medan, 20155, Indonesia
[3]Accounting, Politeknik Negeri Medan, Almamater No. 1, Medan, 20155, Indonesia

Email : angeliapurba@polmed.ac.id[1], Miduk.19570331@polmed.ac.id[2], arlinapurba@polmed.ac.id[3]

ARTICLE INFO

Article history:
Received: 12/07/2020
Revised: 22/08/2020
Accepted: 01/11/2020

Keywords:
Employers' perceptions, job skills, technology, information and communication technology (ICT)

ABSTRACT

The purpose of this research was to explore employers' perceptions of the five most important job skills they need graduates to have in order to graduates to be considered employable in the job market. The research data is obtained by a survey of entrepreneurs in the Riau Islands Province from various of companies that employ engineering information and communication technology. The research instrument was adopted from the technical accreditation board manual and the Malaysia Future of Engineering Education Report. Data from entrepreneurs were obtained from the information system of the Riau Islands Province Kadin in collaboration with the Riau Islands Province Kadin by circulating the instrument through the WA group and E-mail. Data were obtained from 119 entrepreneurs in the Riau Islands. Data were analyzed with descriptions of analysis using SPSS V 20. From the analysis carried out, it was seen from the average, the five most important job skills in a row: The ability of graduates to identify problems, apply problem-solving, solutions and formulations, the ability to present ideas effectively and self-confidence, the ability to design and conduct experiments, as well as analyze and interpret, the ability to function effectively as an individual and in a group, and the ability to continue to learn independently in acquiring new knowledge, technology and skills.

1. Introduction

Shifting labor market demand for job skills necessitates the availability of a dynamic and adaptive workforce of science and technology. This is due to industry challenges in a very dynamic world market and swift technological advances, which require the industry to redesign the workplace, requiring attitudes and attitudes as well as work orientation that goes beyond minimum standard task performance (Overtoom, C. 2014). Therefore higher education institutions' role is increasingly significant, not only to produce graduates in certain fields of study programs, but more importantly to be able to develop graduate work skills by following industry demand. Thus universities are required to collaborate with the industrial world to obtain the latest information on industry demands with employee recruitment and employee career paths so that universities can equip their graduates as early as possible not only with academic skills but also with other skills (Mason, GW et al., 2014). It is no secret that many college graduates find it difficult to find jobs in their respective fields, so that employers tend to negatively view university graduates in Indonesia, including graduates in computer engineering and information technology. The work skills referred to include :

a) The ability to identify problems, apply problem-solving, solutions and formulations
b) The ability to use techniques, skills and technical equipment
c) The ability to present ideas effectively and confidently
d) The ability to function effectively as an individual and in a group
e) The ability to acquire and apply basic knowledge of engineering and information technology
f) The ability to continue to learn independently in obtaining new knowledge, technology and skills
g) The ability to design and conduct experiments, as well as to analyze and interpret data
h) The ability to design and evaluate operational performance using a systematic approach
i) The ability to acquire deep technical competences in engineering
j) The ability to recognize the need for lifelong learning
k) The ability to understand socio-cultural, global and environmental responsibility
l) Has competence in the field of theory and engineering research;

Accredited "Rank 4"(Sinta 4), DIKTI, No. 36/E/KPT/2019, December 13th 2019.

m) Has basic entrepreneurial skills (Manual of the technical accreditation board and the Malaysia Future of Engineering Education Report).

Thus this study is significant in examining the perceptions of employers in Indonesia about the most important job skills when they recruit college graduates.

Jerry Phon (2009) states that employability is a series of achievements, skills, understandings, and personal attributes that make graduates more likely to get jobs and be successful in their choice of work. There are three components of employment:

a) Knowledge: knowledge will determine what they know, what they will do and how they will do it
b) Ability: know job opportunities and job entry requirements
c) Presentation: identify their level of knowledge and their abilities that they are employable.

Siememsma (2008) states a conflict between what is taught to students in higher education and the reality of jobs in the industrial world. Meanwhile, Hamatteh and Jufout (2003) describe a committee at the national level, which consists of the education sector and the industrial world to suit the job market's demands and needs with a portfolio. This portfolio must be implemented at the educational level and evaluated regularly. The evaluation results can be made the skill level, curriculum revision, and ultimately to improve and control each student's skills. Such a model can reduce the cost of pre-employment training that burdens the industrial sector financially, increase graduate's skill level, and increase confidence in the education sector. Winbladh (2004) states that graduates are not equipped to enter the job market and survive career advancement, suggesting project-based and collaborative learning to enhance students' abilities. Furthermore, Burell and Grizzell (2008) explain that institutions must be respond to demographic changes and changes in science and technology in the industry to graduates follow their developments. Historically, universities have been very slow in adopting social change. Zahid (2008) concluded that the relationship between higher education and the industrial world must update the subject matter constantly. By creating a partnership between higher education and industry, the two can benefit from each other's resources.

Topics discussed are employment skills for employability, or the minimum employment skills requirements that employers expect from college graduates. There are various definitions of job skills from experts, Robbins (2000) states that these skills can be divided into 4 categories, follows:

a) Basic Literacy Skill is a basic skill that each person possesses, for example, such as writing, reading, listening, or also the ability to count.
b) Technical Skill is a skill obtained through learning in engineering, including using equipment, repairing cellphones.
c) Interpersonal Skill is a skill for each person to communicate such as expressing opinions and working together.
d) Problem-solving is a person's expertise in solving a problem using logic.

Meanwhile, Muzni Ramanto, et.al (1991) stated that the word skill could be equated with dexterity. A person who can be said to be skilled is a person who does or completes the job quickly and correctly.

However, if that person does or finishes his job quickly but the result is not suitable in the wrong sense, that person cannot be skilled. If that person can do the job properly and according to what is ordered, even though it is slow in completing it, that person can be concluded as a skilled person. The skills needed in the industry are not only for getting a job, but also for the potential to grow within a company and contribute successfully to the company's strategic direction.

According to Mustapa (2000), industrial entrepreneurs say that engineering graduates in Malaysia already have adequate technical skills, but these entrepreneurs are still not satisfied with the communication and interpersonal skills, critical thinking, problem-solving and entrepreneurial skills. Much empirical evidence shows that employers are more likely to hire graduates with non-generic and technical skills. Hagan (2004) when surveying 490 information and computer technology companies in Australia found that 40% of companies were dissatisfied with recent graduate's management skills and communication skills. Likewise, Nguyen, ND et al. (2005) reported that engineering graduates from Japanese tertiary institutions lacked the initiative and problem-solving skills required by employers. Therefore, it is interesting to do so.

2. Research Methods

Data was collected by surveying, distributing questionnaires as a research instrument to companies that employ engineering and information technology graduates and computers in the Riau Islands. This study identifies and selects companies that employ graduates in engineering and information technology and computers using a database provided commerce industry and the national construction and contractor implementing employers association. From the available database, 2437 companies were identified, consisting of companies related to the government, multinational companies, and small and medium

Accredited "Rank 4"(Sinta 4), DIKTI, No. 36/E/KPT/2019, December 13th 2019.

enterprises. This company is identified as a company that accepts students to do internships in engineering and information technology and computers, so that the company provides an accurate assessment of the job skills of students who carry out the internship.

3. Research Results

119 companies responded to the questionnaire sent, consisting of 36 government-related companies, 41 multinational companies, and 42 small and medium enterprises.Employers' perceptions of the five most important job skills. This section discusses the descriptive findings of five employability skills perceived by various employers. The findings are organized by type of company, a ranking of importance. Table 1 shows the five most important employability skills of government-related firms. Employers show that graduates to identify problems, apply problem-solving, solutions and formulations (mean = 4, 39, standard deviation (sd) = 0.56) as the most important job skills, followed by the ability to present ideas effectively and reliably self (mean = 4, 26, standard deviation (sd) = 0.54). Next is the ability to design and evaluate operational performance by utilizing a systematic approach (mean = 4, 22, standard deviation (sd) = 0.50) and the ability to recognize the need for lifelong learning (mean = 4, 18, standard deviation (sd) = 0.60) and had basic entrepreneurial skills (mean = 4.12, standard deviation (sd) = 0.64).

Table 1
Perceptions Related to Government Employers Skills Feasibility Five Most Important Job

Rank	Employability	Mean	Standard Deviation (SD)
1	The ability of graduates to identify problems, apply problem solving, solutions and formulations	4, 39	0,56
2	The ability to present ideas effectively and confidently	4,26	0,54
3	Ability to design and evaluate operational performance using a systematic approach	4,22	0,50
4	Ability to recognize the need for life long learning	4,18	0,60
5	Have basic entrepreneurial skills	4,12	0,64

Furthermore, table 2 describes the Multinational Entrepreneur's perceptions of the five most important job skills required of engineering and information and communication technology graduates in order for their graduates to be considered employable. The most important work skills according to Multinational Entrepreneurs are the ability to identify problems, apply problem-solving, solutions and formulations (average = 4, 45, standard deviation (sd) = 0.52), then the ability to present ideas effectively and reliably self (mean = 4, 39, standard deviation (sd) = 0.56), ability to design and conduct experiments, and analyze and interpret data (mean = 4, 30, standard deviation (sd) = 0, 64), the ability to function effectively as an individual and in a group (mean = 4, 29, standard deviation (sd) = 0.62), and the ability to continue to learn independently in acquiring new knowledge, technology and skills (mean = 4, 28, standard deviation (sd) = 0.66).

Table 2
Perception of The Multinational Employers Skills Feasibility Five Most Important Job

Rank	Employability	Mean	Standard deviation (SD)
1	The ability of graduates to identify problems, apply problem-solving, solutions and formulations	4.45	0,52
2	The ability to present ideas effectively and confidently	4,39	0,56
3	The ability to design and conduct experiments, as well as analyze and interpret data	4,30	0,64
4	Ability to function effectively as an individual and within a group	4,29	0,62
5	The ability to continue learning independently in acquiring new knowledge, technology and skills	4,28	0,66

Furthermore, table 3 describes the SMEs' perceptions of the five most important job skills required of engineering and information and communication technology graduates in order for their graduates to be considered employable. According to Small and Medium Entrepreneurs, The most important work skills are identifying problems, applying problem-solving, solutions and formulations (average = 4, 29, standard deviation (sd) = 0.48), then have competence in the field of theory and research. engineering (mean = 4.27, standard deviation (sd) = 0, 50), then the ability of graduates to use techniques, skills, and engineering equipment (mean = 4.27, standard deviation (sd) = 0 , 52), and have basic entrepreneurial skills (mean = 4.20, standard deviation (sd) = 0.50).

Accredited "Rank 4"(Sinta 4), DIKTI, No. 36/E/KPT/2019, December 13th 2019.

Table 3
Perception of Small and Medium Entrepreneurs Skills Feasibility Five Most Important Job

Rank	Employability	Mean	Standard deviation (SD)
1	The ability of graduates to identify problems, apply problem-solving, solutions and formulations	4.29	0,48
2	Have competence in the field of theory and research in the engineering field 4.27 0.50	4,27	0,50
3	The ability of graduates to use engineering techniques, skills and equipment 4.22 0.52	4,22	0,52
4	Have basic entrepreneurial skills 4.20 0.50	4,20	0,50
5	Ability to continue to learn independently in acquiring new knowledge, technology and skills	4,14	0,60

3.1 Discussion

From tables 1, 2, and 3 employers' perceptions of employability, graduates can identify problems, apply problem-solving, solutions and formulations are the most important. At the same time, the ability of graduates to convey ideas confidently and effectively is a skill that is also considered critical by companies. This is due to the fact that without proper and effective communication skills, it can lead to misinformation which affects productivity. Besides, along with advances in information and communication technology, there is an increase in the number of communication activities taking place within companies, so that graduates are required to equip themselves with the arts and sciences of communication.

Likewise, graduates need to be able to work in teams, due to the fact that all individuals in a company are interrelated. Thus, it requires a variety of ideas and expertise in pushing the company forward. One must know when to lead well, and also when to be led according to team rules. This is because a good synergy between the leaders and those led in each section will positively impact the company.

At the same time, graduates in engineering and information and communication technology must have a solid foundation in using modern techniques, skills and tools in the graduate's field of expertise, and have the drive to acquire and apply knowledge in their respective fields. Core competencies that must be equipped by graduates to be truly skilled and competent. The result is that companies that employ graduates will benefit greatly by following graduates' expertise.

4. Conclusions and Suggestions

4.1 Conclusions

This study found that the ability of graduates to identify problems, apply problem-solving, solutions and formulations, the ability to carry out good and effective presentations, and lead and work as a team stands out among entrepreneurs from three types of categories, namely: Government-related entrepreneurs, entrepreneurs multinational, and SME entrepreneurs. Employers consider these employability skills one of the more important skills employers need a prospective employee to have before hiring graduates. These skills are something that has been identified by previous research as technical job skills needed by employers in Asia.

These employability skills are essential, because they have the ability to think, reason, and make the right decisions for all employees. Employees are expected to be problem solvers and solution providers for the company they work for. Therefore it is essential for companies that need to be able to recruit graduates who have problem-solving skills because the impact will appear on company performance. Therefore it is essential to recruit graduates who have the ability to think critically, act logically, and evaluate situations to make decisions and solve problems, problem-solving skills are considered a valuable asset for the company.

4.2 Advice

Higher education institutions and their graduates must make efforts to equip graduates with the requirements set by the industry, especially those related to employability skills.

Higher education institutions must have consistent involvement with the industry in understanding the dynamic requirements related to job skills to prepare their graduates.

Higher education institutions must be proactive in identifying the industry requirements. This creates a greater opportunity to reduce the gap between universities, graduates and industry, so that graduates can be accepted into the industry.

Each lecturer in carrying out the learning process for students, both in the classroom, laboratory, and workshop strives to continuously think logically and systemically, in identify problems, implement problem-solving, solutions and formulations of each learning process activity, so that students are accustomed to thinking logically and systematic.

Accredited "Rank 4"(Sinta 4), DIKTI, No. 36/E/KPT/2019, December 13th 2019.

5. References

[1] Jerry Pohn (2009). *"What do Employers Look for in Hiring People? The importance of Employability skills"*, Published: December 1, 2009.
[2] G. Smith, *"Paper Title"* (to be published).
[3] Mason, GW., Williams, G. And Crammer, S. (2014). *Employability Skills Initiatives in Higher Education: What Effect Do They Have on Graduate Labor Outcomes?* November 5, 2014.
[4] Mustapha, R. (2000). *The Role of Vocational and Technical Education In the Industrialization of Malaysia as Perceived by Educators and Employers*. Doctoral Thesis, Purdue University.
[5] Muzni Ramanto, Soemarjadi, Wikdadati Zahri (1991). Vocational Education. Jakarta: Depdikbud.
[6] Nguyen, ND., Yoshinari, Y. and Shigeji. (2005). University education and employement in Japan; *Students' Perceptions on Employment Attributes and Implications for University Education*. Quality Assurance in Educ., 13 (3): 202-208
[7] Overtoom, C. 2014. *Employ ability Skills*: an update, 5 November 2014
[8] Robbins, David Stephen P. (2000). *Human Resources Management Concept and Practice*. Jakarta, PT. Preenhalindo.