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EDUCATOR'S PERCEPTION TOWARDS ENGINEERING GRADUATE SKILLS
AT UNIVERSITI TEKNIKAL MALAYSIA MELAKA (UTeM): A
FUNDAMENTAL STUDY

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Laporan ini dikemukakan sebagai memenuhi sebahagian daripada syarat
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DECLARATION

I acknowledge this is the result of my own work except the summaries and except that I have described each of the sources.

Signature :

Name :

Date :

DEDICATION

I would like to dedicate the appreciation to my husband, Muhammad Syauqi bin Salim for encourage me to finish this study. I am also want to dedicate a lot of appreciation to my beloved parents, Che Jali bin Ibrahim and Wan Meriam binti Wan Adam who motivates me to complete the study. I am also want to thank my supervisor, En. Hasan bin Saleh for helping me a lot through the journey to complete the study. Also for my fellow friends, thank you for giving the supports and advices during the study.

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ABSTRACT

Teaching effectively engineering lessons in the classroom requires good teaching skills but preparing students, especially students with various skills is a challenging task. In the context of the Universiti Teknikal Malaysia Melaka (UTeM), engineering graduates are expected to be good in academic and soft skills especially those who are willing to work as engineers. The aim of this study is to identify the educator's perceptions towards engineering graduates' skill at Universiti Teknikal Malaysia Melaka (UTeM). In this study, the independent variables or the perception of educator towards engineering graduates' skill consists of fundamental skill, personal management skill, teamwork skill, and adaptive skill. Firstly, the researcher will identify the perception of educator towards engineering graduates skill. Secondly, researcher will study the student level of skills. Thirdly, researcher will analysed the effect of skills to the student's personality. The study will adopt the quantitative research methodology. A structure survey instrument will be developed to study the educator's perception towards engineering students. The targeted respondents are among the lecturers in one of faculty at Universiti Teknikal Malaysia Melaka (UTeM) which is under MTUN. In the findings of this study, the data obtained are analysed using Pearson Correlation simple regression and found that all the variables are significant and has influence educator's perception. The findings shows that fundamental skill, teamwork skill and adaptive skill has significant relationship with educator's perception in Universiti Teknikal Malaysia Melaka (UTeM).

Keywords: Educator's perception, fundamental skill, personal management skill, teamwork skill, adaptive skill.

ABSTRAK

Mengajar pelajaran kejuruteraan secara berkesan di dalam kelas memerlukan kemahiran mengajar yang baik tetapi menyiapkan pelajar, terutama pelajar dengan pelbagai kemahiran adalah tugas yang mencabar. Dalam konteks Universiti Teknikal Malaysia Melaka (UTeM), graduan kejuruteraan dijangka mahir dalam kemahiran akademik dan kemahiran asas terutama mereka yang sanggup bekerja sebagai jurutera. Tujuan kajian ini adalah untuk mengenal pasti persepsi pendidik terhadap graduan kejuruteraan di Universiti Teknikal Malaysia Melaka (UTeM). Dalam kajian ini, pembolehubah bebas atau persepsi pendidik terhadap kemahiran graduan kejuruteraan terdiri daripada kemahiran asas, kemahiran pengurusan peribadi, kemahiran kerja berpasukan, dan kemahiran adaptif. Pertama, penyelidik akan mengenal pasti persepsi pendidik terhadap kemahiran graduan kejuruteraan. Kedua, penyelidik akan mengkaji tahap kemahiran pelajar. Ketiga, penyelidik akan menganalisis kesan kemahiran kepada personaliti pelajar. Kajian ini akan menggunakan metodologi penyelidikan kuantitatif. Instrumen kajian struktur akan dibangunkan untuk mengkaji persepsi pendidik terhadap pelajar kejuruteraan. Responden yang disasarkan adalah antara tenaga pengajar di salah satu fakulti di Universiti Teknikal Malaysia Melaka (UTeM) yang berada di bawah MTUN. Dalam penemuan kajian ini, data yang diperolehi dianalisis dengan menggunakan regresi mudah korelasi Pearson dan mendapati bahawa semua pembolehubah adalah penting dan mempunyai pengaruh pendengar yang berpengaruh. Dalam kajian ini menemukan bahawa kemahiran asas, kemahiran kerja berpasukan dan kemahiran adaptif memiliki hubungan yang signifikan dengan persepsi pendidik di Universiti Teknikal Malaysia Melaka (UTeM).

Kata kunci: *Persepsi pengajar, kemahiran asas, kemahiran pengurusan peribadi, kemahiran kerja berpasukan, dan kemahiran adaptif.*

TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
	DECLARATION	ii
	DEDICATION	iii
	ACKNOWLEDGEMENT	iv
	ABSTRACT	v
	ABSTRAK	vi
	TABLE OF CONTENTS	vii
	LIST OF FIGURES	x
	LIST OF TABLES	xi
	LIST OF ABBREVIATIONS	xii
	LIST OF APPENDICES	xiii
CHAPTER 1	INTRODUCTION	1
	1.1 Background of the Study	2
	1.2 Problem Statement	5
	1.3 Research Question	6
	1.4 Research Objective	6
	1.5 Scope and Limitation of the Study	7
	1.6 Significance of the Study	7
CHAPTER 2	LITERATURE REVIEW	8
	2.1 Educator's perception	9
	2.2 Fundamental skill	10
	2.2.1 Listening skill	11
	2.2.2 Soft skill	12
	2.2.3 Communication skill	13
	2.2.4 Reading and writing skill	13

2.3	Personal management skill	14
2.3.1	Practice social skill	14
2.3.2	Thinking level	15
2.3.3	Student's participation	16
2.3.4	Student's maturity	17
2.4	Teamwork skill	18
2.4.1	Leadership skill	19
2.4.2	Contribution to the team	20
2.4.3	Conflict in group	20
2.4.4	Decision making	21
2.5	Adaptive skill	22
2.5.1	Ability to work	22
2.5.2	Technology change	23
2.5.3	Learning environment	24
2.5.4	Vocational behaviour	25
2.6	Research Framework	26
2.7	Hypothesis	27
2.8	Summary	28
CHAPTER 3	RESEARCH METHODOLOGY	29
3.1	Research Design	30
3.2	Research Strategy	31
3.3	Quantitative Research	31
3.4	Data Collecting	32
3.5	Data Analysis	32
3.6	Research Location	33
3.7	Research Population and Sample	33
3.8	Research Instruments	35
3.9	Research Reliability and Research Validity	35
3.9.1	Reliability	35
3.9.2	Validity	36
3.10	Summary	36

CHAPTER 4	DATA ANALYSIS	37
4.1	Respondent Characteristic	38
4.2	Reliability Test	44
4.3	Hypothesis Testing	46
4.4	Summary	55
CHAPTER 5	CONCLUSION AND RECOMMENDATION	56
5.1	Conclusion	57
5.2	Limitation of Study	62
5.3	Recommendation for Future Research	62
5.4	Summary	63
REFERENCES		64
APPENDIX		68

LIST OF FIGURES

NO	TITLE	PAGE
1	Research Framework	26
2	Research Flow of the Study	30
3	Gender	38
4	Marital Status	39
5	Race	40
6	Age	42
7	Level of Education	43
8	Significant Relationship of Independent Variables and Dependent Variable	54

LIST OF TABLES

NO	TITLE	PAGE
1	Krejcie & Morgan Table, 1970	34
2	Respondent by Gender	38
3	Respondent by Marital Status	39
4	Respondent by Race	40
5	Respondent by Age	41
6	Respondent by Level of Education	43
7	Rules of Thumb	44
8	Reliability Analysis of Pilot Test	45
9	Correlation Coefficient Value	46
10	Simple Regression Result for Fundamental Skill	48
11	Simple Regression Result for Personal Management Skill	49
12	Simple Regression Result for Teamwork Skill	50
13	Simple Regression Result for Adaptive Skill	51
14	Pearson Correlation Analysis Result for Variables	52
15	Summary of Hypothesis Results for Objective 1	57
16	Pearson's Correlation Result for Objective 2	60

LIST OF ABBREVIATIONS

MTUN	Malaysian Technical University Network
TUCN	Technical University College Network
KUITTHO	Kolej Teknologi Tun Hussein Onn
KUTKM	Kolej Universiti Teknikal Kebangsaan Malaysia
KUKTEM	Kolej Universiti Kejuruteraan Teknologi Malaysia
KUKUM	Kolej Universiti Kejuruteraan Utara Malaysia
UTeM	Universiti Teknikal Malaysia Melaka
UTHM	Universiti Tun Hussein Onn Malaysia
UMP	Universiti Malaysia Pahang
UniMAP	Universiti Malaysia Perlis
UIC	University Industrial Centre

LIST OF APPENDICES

APPENDICES	TITLE	PAGE
A	Gantt Chart FYP 1	68
B	Gantt Chart FYP 2	69
C	Questionnaire	70

CHAPTER 1

INTRODUCTION

The first chapter introduces the background of the study on what the study is all about, the research questions and research objectives. Besides, it also clarifies the scope and limitation of the study as well as the significant of the study for everyone. The topic of the study is about the perception of the educator towards engineering graduates skill at Universiti Teknikal Malaysia Melaka (UTeM). Basically, educators nowadays place main concern on and give prominence to students that have engineering skills which can make the students successful or get employed in engineering field in the future. Furthermore, the study also conducted to identify the student's level of skills where everyone aware that each student has their own capability in any field. The student's level of skills will addresses the effect of the skill to the student's personality. This study indicates that every student has different skills which are fundamental skills, personal management skills, teamwork skills, and adaptive skills. The skills will produce the personality of the student. As a result, the research that had been conducted will find this set of engineering graduates skill.

1.1 Background of the study

Universiti Teknikal Malaysia Melaka (UTeM) was set up on December 1, 2000. It was set up under Section 20 of the University and University College Act 1971 (Act 30) compelled of Kolej Universiti Teknikal Kebangsaan Malaysia (Incorporated) 2001, at that point known as Kolej Universiti Teknikal Kebangsaan Malaysia (KUTKM). On February 1, 2007, UTeM experienced a rebranding exercise when Kolej Universiti Teknikal Kebangsaan Malaysia (KUTKM) was given another name as Universiti Teknikal Malaysia Melaka (UTeM). UTeM is the primary specialized college and the fourteenth state funded college recorded in Malaysia. UTeM pioneers the "practice and application arranged" instructing and learning strategy for higher specialized training in Malaysia. This is in accordance with the administration's choice to provide food for high specialized gifted human asset requirements of Malaysia's ventures.

UTeM now works from three grounds to be specific the Main Campus, the City Campus and the Technology Campus. UTeM has seven distinct resources which give inside and out specialization in building, designing innovation, ICT and innovation the board trains alongside the Institute of Technology Management and Technopreneurship and Center for Languages and Human Development. The resources are Electrical Engineering, Electronics and Computer Engineering, Mechanical Engineering, Manufacturing Engineering, Information and Communication Technology, Technology Management and Technopreneurship and Faculty of Engineering Technology. The college offers scholastic projects at Diploma, Bachelor, Masters and PhD levels.

The projects offered at UTeM are profoundly particular. UTeM pioneers and leads in designing innovation programs among Technical Universities in Malaysia or MTUN. Presently, UTeM offers 10 designing innovation programs with the most elevated understudy enrolment of 2,600, which additionally speaks to 60% of all out understudy enrolment at UTeM. The educational program is grown intimately with industry specialists and adjusted to the national motivation for Technical and Vocational Education and Training (TVET) to guarantee its quality and pertinence address the issues of the progressed mechanical divisions and therefore produce

exceptionally talented HR for Malaysia's improvement towards a high-pay country by 2020.

UTeM concedes nearby as well as universal understudies and these incorporate understudies from Indonesia, Korea, Japan, Saudi Arabia, Chad, Syria, Pakistan, Cameroon, Bangladesh, Tanzania, India, Somalia, Singapore, Qatar, Palestine, Libya, Iraq, Iran, Ghana, France, Yemen, Nigeria and Jordan.

As an engaged college, UTeM now has almost 12,000 understudies selected with a lion's share in undergrad level. UTeM has produced right around 20,600 alumni since 2005. UTeM's alumni are profoundly looked for by enterprises with a record 80% of graduate's capability employability in neighborhood private and worldwide organizations.

In upgrading understudies' one of a kind universal learning experience, extraordinary abroad investigation programs are given through the Students' Mobility Program and Erasmus and Scholarship Program. Upgrading worldwide acknowledgment and pertinence, the disguise activity of UTeM incorporates associations in research and advancement just as educating and learning in territory of regular premium. UTeM's vital college's accomplices incorporate are Telecom Bretagne, France, University of Applied Sciences and Arts, Germany, KUMOH International Institute of Technology, South Korea, Marmara University Turkey, Universiti Dian Nuswantoro, Indonesia and the sky is the limit from there. What's more, UTeM has solid linkages with global businesses, to list a few people, for example, Man and Tel Co. Ltd, Infineon Technologies, Composites Technology Research Malaysia (CTRM), Keysight Technologies, and Dassault System, in this manner profiting the understudies by giving genuine industry involvement with educating and learning. UTeM's savvy cooperative energy with businesses is vital in increasing the value of understudies' information, subsequently improving their possibilities of work upon graduation.

Engineering is the use of information as science, math, and exact proof, for the development, plan, development, activity and support of structures, machines, materials, programming, gadgets, frameworks, procedures, and associations. Designing orders spread a scope of increasingly particular engineering fields, each

with a progressively explicit accentuation on explicit scientific fields utilized, utilized science, and application types.

In recent years, there is a dumping of new graduates in engineering field. These graduates are produced from all the universities under MTUN. The fresh graduates produced by the universities are assumed by the industry to be “readymade” for the job in the context of having the applicable basic knowledge and skills for the job, excellent attitude, and good interpersonal skills with high probity plus the willingness to learn (National Graduate Employability Blueprint, 2012). Every new graduate needs a lot of different skills to succeed. A research conducted by Zaharim said that higher education provider such as universities need to make sure that all graduates are qualified or ready to be succeed in work and life in this new period of the worldwide economy (Zaharim et al. 2010). Educators, employers or government additionally should have a standard comprehension of set of abilities that ought to be claimed by engineering graduates.

Hence, UTeM does not want to bring out just a student who has knowledge in the classroom, but also practical-oriented student that has their own skills which will expose their individual personalities. A report by the Australian Chamber of Commerce and Industry and the Business Council of Australia for the Department of Education, Science and Training, Canberra, uncovered that aptitude is the capacity to play out a particular errand (DEST, 2006). Students or graduates nowadays need to discover skill as many as they can to fulfil the employment required after graduate. In the other words, they need to earn many skills to be successful. According to Elena (2009), there is a method to measure some of these skills. However, skills can be determined in comparable way. It is easy to measure the student’s knowledge but to measure a student’s skill and capability is quite difficult situation to handle. The estimating aptitudes are troublesome, and various definitions and strategies have been utilized (Borghans et al. 2001).

Engineering is significant. It is additionally testing and energizing. Engineers use models gave by science joined imaginative intuition to tackle issues and make new plans that advantage mankind. Engineering is one of the largest areas of profession in Malaysia. There are a lot of engineering field that can be operated according to different specifications. Profession in engineering is energizing and fun. It includes

deep rooted figuring out how to adjust to changes in the public arena and the characteristic world. It frequently includes work in multi-disciplinary, multicultural groups, different destinations. It is a truly significant calling, and the outcome, when the understudy succeed, can be exceptionally fulfilling. The world is changing, and engineers are the most behind this development. Most of today's services and products have several engineering elements involved in their concepts at least, paving the way for a long, satisfying and healthy life for those affected by them.

1.2 Problem Statement

Engineering graduates need a diversification of skills to ensure that they will meet the standards required by the employer in the industry after graduation and finish the study. Therefore, the educator's perception of the skills of an engineering student plays an important role in ensuring that students are successful in the future.

1.3 Research Question

The finding of the study is to identify the engineering graduates' skill which are fundamental skill, personal management skill, teamwork skill, and adaptive skill. Furthermore, it is also to analyse whether the student level of skills meet the requirement to get employed and successful in the future. Moreover, the researcher tried to determine how the skill of the students will affect their personality. Some of the questions to be addressed in the research included the following:

- What is the perception of the educator to the engineering graduate at Universiti Teknikal Malaysia Melaka (UTeM)?
- How far the student level of skills at the Universiti Teknikal Malaysia Melaka (UTeM)?
- How the skill of the students will affect their personality?

1.4 Research Objective

The general objectives of the research are outlined below:

- To study the perception of the educator to the engineering graduate at Universiti Teknikal Malaysia Melaka (UTeM)
- To identify the student level of skills at Universiti Teknikal Malaysia Melaka (UTeM)
- To analyse the effect of skill to the students' personality

1.5 Scope and Limitations of the Study

The scope of the study is to identify the educator's perception towards engineering graduates skill at Universiti Teknikal Malaysia Melaka (UTeM). This research will be conducted in a Higher Education Institution which is Universiti Teknikal Malaysia Melaka. It is one of the four rebranding universities under MTUN. It is called as KUTKM before. UTeM was established on 1st December 2000 as the first technical public university in Malaysia. The focus of the research will be at one of the faculty at the UTeM. Furthermore, the respondent for the study will be the lecturers in UTeM.

1.6 Significance of the Study

This study is conducted to find out the educator's perception towards engineering graduate in UTeM. The findings of the research will evaluate how the engineering graduate skill will affect their personalities. The results from the educators will be valuable for students to come out with variety of skills needed. The skills required also will determine whether the students will be able to success in the industry or not. High perception on graduate skill is expected from educators who perceive themselves as having positive attitude to employment readiness.

CHAPTER 2

LITERATURE REVIEW

This chapter discusses the perception and findings of the topic from previous researchers and authors. The variables was also explained and discussed. This chapter also stated the overall view of educator's perception which fundamental skill, personal management skill, teamwork skill, and adaptive skill. The literature review will also help the researcher to construct the questionnaire that related to the topic. Moreover, the prediction of the research will be presented in this chapter. The theoretical framework will also attached in this chapter.

2.1 Educator's perception

Higher education providers need to guarantee that all graduates are qualified and skillful to prevail with regards to working and living in this new time of worldwide economy (Md Yusoff, Omar, Zaharim, Mohamed, and Muhamad, 2012). Additionally, higher education providers, bosses and governments need to have a typical comprehension of the arrangement of abilities that must be attempted by building graduates. Reports by the Australian Chamber of Commerce and Industry and the Australian Business Council (2002) affirm that teachers are searching for individual characteristics, correspondence and collaboration, critical thinking activities and ventures, arranging and sorting out, long lasting self-administration and learning are claimed by competitors. As indicated by Azami Zaharim, Yuzainee Md. Yusoff, Mogd. Zaidi Omar, Azah Mohamed, and Norhamidi Muhamad (2009), new and crisp engineering graduates today face more difficulties and rivalries in picking up business contrasted with past graduates.

Lecturers who have significant exposure to the industry or have their own experience be an engineer may be the most appropriate to demonstrate the skills and knowledge that the graduates actually need to be able to embrace. This is in line with the teacher's reflection approach in the model of teaching and learning transactions where visual features are considered to be the teaching process (Johan, 2015). Fresh graduates created by the university are expected by the industry to become readymade for employment in the context of having relevant knowledge and basic skills for work, good attitude, and good interpersonal skills with high integrity and readiness to study (Graduate Competency Blueprint Nationality, 2012). Meanwhile, some engineering studies have on a very basic level found that the present instruction framework and practice in Malaysia cannot convey graduates completely furnished with the nonexclusive attractiveness or abilities required by present or future businesses (Zaharim, Omar, Basri, Liza, & Isa, 2009). However, some studies show that engineering graduates in Malaysia have good basic engineering knowledge (Azami Zaharim et al., 2009) and they have no technical shortcomings (Nurita Juhdi, 2007).

2.2 Fundamental skill

Fundamental skill is otherwise called fundamental expertise which is the capacity to play out an undertaking or comprehend a thought. Fundamental skill is additionally the fundamental capacity important to work ably society. Report by Md Yusoff et al., (2012), a Senior Policy Analyst, uncovers that aptitudes can be estimated precisely and when all is said in done and similar. DEST (2006) said that aptitudes are the capacity to play out specific errands. Alluding to Yusoff et al., (n.d.), estimating understudy information is discrete actualities however estimating understudy aptitudes and the capacity to apply information is an obscure circumstance.

Estimation is a measurement and activity related procedure (Md Yusoff et al., 2012). Steps can be objective or abstract. Measures can be objective or abstract. Emotional not to do (Simmons, 2000). Estimation is a vital evaluation segment. It gives us information to decide the estimation of the surveyed item (Kaufman et al., 1997). The aptitudes required not exclusively to pick up work, yet additionally to advance in the endeavor to accomplish one's latent capacity and to contribute effectively to the key course of the organization (DEST, 2002).

Those fundamental abilities vital for getting, keeping, and doing great on work (Robinson J. P., 2000). Additionally, Eraut (2004) claims that ongoing examination on instructive results, particularly at the tertiary level, has indicated that there is a hole between the information required at the work environments and the information and aptitudes created through proper training. Clearly, building graduates need to have certain abilities to assist them with applying and practice information adequately in the working environment (Zaharim A, et. al., 2009).