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Research paper



Soft Skills Assessment between Diploma and Degree Students During Industrial Training: an Industry's Observation

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Abstract

Industrial training program is one of the main university-industry linkages that serves the sole purpose of improving the employability of university graduates. Feedbacks from industries on graduate's performances often become a benchmark for universities to measure their graduates' competencies. It is therefore essential to obtain industry's observation on the graduates to ensure that the university's academic curriculums are appropriately aligned to meet industry requirements. This paper examines the observations of employers with regards to interns' soft skills at workplace. A sample of 298 respondents participated in this survey. The sample includes 40.6% (n=121) respondents for degree programmes and 59.4% (n=177) respondents for diploma programmes. A total of 28 soft skills attributes were used to examine intern's performance at the organization and these attributes were classified into seven key skills competency i.e. (1) interpersonal skills, (2) communication skills, (3) intellectual skills, (4) initiative taking, (5) job attitude, (6) personal efficiency, and (7) leadership skills. The results showed that employer's observation on degree students gave higher mean scores in all of the skill categories. A t-test was executed to determine if the difference in their mean scores was significant. The result showed that there was a significant difference in the job attitude category (p value = 0.04). This directly states that degree students showed better job attitude than diploma student during industrial training in the following contexts: (1) they are more responsible to the task given, (2) they are highly motivated to complete the task given, (3) they are positive in stressful situation, (4) they are punctual and (5) they frequently come to work. Future work from this study will involve determining the possible association between job attitudes of degree students with project management skills such as in the final year project.

Keywords: *Industrial Training; Higher Learning Institution; Internship; Academic Attachment; Industry-University Linkages*

1. Introduction

Rapid technological advancement has led to changes in industry needs for fresh graduates' skills and competencies. University graduates are our human capital; and together with knowledge and skills, these are the key assets for a country to achieve a fully developed nation [1]. As one of the main workforce sources to the industry and economy, higher education institutions are put under pressure in meeting with the industry requirements and delivering competent graduates. To be able to supply graduates as what the industry demands, higher institutions must first understand what the industry needs from our graduates when they enter the job market. The requirements from the industry must be acknowledged for employability reason and to help prepare the work-readiness of graduates for the workforce [2]. This is in line with the most recent Malaysian Higher Education Blueprint (2015-2025) where 'improving the quality of graduates' has been marked as one of the national aspirations [3].

Malaysia, like many other countries worldwide, has been experiencing high unemployment rates among university graduates [3, 4]. It was reported that one out of four fresh graduates remain unemployed six months after graduation. Sadly, Malaysian fresh graduates are still ill-equipped with the necessary competencies [5]. The contributing factors for fresh graduates' unemployment were due to their poor command in English language, lack of communication skills and lack of attitude [6, 7]. Based on the specifications in the job advertisements, communication skill and teamwork remain the two most sought after soft skills demanded by the industry [8].

There are various elements of soft skills outlined by the industry which consists of communication skills, team work skills, problem solving skills, flexible and adaptive skills, lifelong learning skills, self-esteem skills, critical thinking skills, initiative, interpersonal skills and ethical and moral skills [8-10]. Many studies offer various other elements [11-13]. However, a comprehensive study by Messum et al. [2] concluded that communication skills, teamwork, technical skills, experience, and interpersonal skills are the core elements in the employability skill set.

Essentially, employability skill set refers to technical skills and soft skills university students are expected to develop [8]. Technical skills or hard skills are the technical expertise and knowledge needed for a job [12] while soft skills are related to competencies and personal qualities of an individual, which can be taken from one job role to another, used within any profession and at any stage of their career [13, 14]. Soft skill competency makes up the core employment criteria and it was reported that 75% to 85% of long-term job success depends on soft skills competency while only 15% to 25% is dependent on technical skills and knowledge [13, 15]. Due to this, graduate employability has now become university-wide responsibility that extends support for its gradu-

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ates to develop necessary employability skills towards successful employment [16].

Consequently, universities are blamed for graduates' deficiency in these soft skills, which are viewed as essential for enhancing productivity and innovation in the workplace [4, 17]. Mismatch of the quality of graduates with industrial expectations has been an on-going concern. Industries claim that university graduates are not adequately competent to enter the job market [11]. Undoubtedly, producing graduates who can meet industry requirements is a challenge to the universities. Likewise, finding skilled graduates that match their requirements is even harder for the industry [6]. The issue in soft skills' deficiency of Malaysian graduates has been extensively discussed by many participating stakeholders involving educationists, policy makers and employers. As fresh graduates are the products of higher learning institutions to serve as human capital for the industry and nation, it is therefore very important that the industry provides feedback in terms of their expectations and observations of our graduates. These feedbacks in turn will help higher learning institutions to reassess and review their current academic curriculum to meet the expectations of the industry [7]. Most importantly, feedback from industry enables curriculum design and delivery to be strengthened and used to improve the overall quality of graduates and institutional systems [3].

Higher learning institutions must continue to pay close attention to the needs of industry as the industry is the future employer of their graduates [18]. Therefore, to adequately prepare graduates for the workforce employment, further emphasis must be put on soft skills development in academic curricula in higher learning institutions [12]. In its move to enhance graduates' employability, the Ministry of Higher Education (MOHE) has identified seven key soft skills to be incorporated in the undergraduate programmes at universities. These soft skills are critical thinking and problem-solving skills, communication skills, lifelong learning and information literacy, teamwork, professional ethics and morality, entrepreneurial skills and leadership skills [10, 19]. A framework for soft skills development for graduates was proposed by Rodzalan and Saat [20]. The framework suggests that industrial training as a medium offers a platform in developing graduates' soft skills.

Many studies have agreed that industrial training is an effective tool in enhancing graduates' employability [1, 18, 21-23]. The industrial training plays a very important component in a university's curricula that provides opportunity for the graduates to translate the knowledge gained into practice [20]. Industrial training program helps both the universities and industries to develop stronger university-industry linkages [24] that provides a channel through which the process of knowledge transfer occurs [22, 25]. Not only industrial training acts as a platform in preparing graduates for work-related experience [11] and expose them to real working environments [26], but also industrial training help graduates to develop key competencies [27].

Through industrial training, graduates get opportunities to increase their competitiveness and employability in the job market [28]. Industrial training benefits graduates since they can apply theory into practice and they can understand better when they experience the job themselves. In addition, graduates are expected to improve their professional and personal skills during the training [29]. On the other hand, to ensure that the graduates are competent to enter the job market with adequate employability skills, feedback of the industrial training program should be frequently executed. Understanding industry expectations would provide opportunities for the university to better enhance its academic curriculum. This study was conducted to identify the interns' overall performance from the perspective of industry's supervisor.

2. Methodology

2.1 Respondents

A total of 309 respondents participated in this survey for the last three semesters. These respondents were the immediate supervisors to the interns (students) during industrial training at the organizations. Upon reaching the final weeks of their training, interns were asked to submit the employer's feedback form to their immediate supervisor at the organization. Supervisors were allowed to email the completed form, fax or mail it to the University's coordinator.

2.2 Survey Instruments

A set of survey questionnaire was distributed to the interns' supervisors at the industry. The survey was made available to the interns through the student portal where interns could download and print the questionnaire any time he or she is ready to submit to the supervisors. Specifically, part A of the survey covers the demographic profile of the organization; part B asks questions on the respondents' expectations of interns; part C focuses on the company's observation of interns; part D asks about the adequacy of the current academic curriculum and part E provides opportunities for the respondents to highlight the weaknesses and strengths of intern observed during the course of training.

The questionnaire requires respondents to quantitatively assess intern's performance based on the identified soft skills. Each skill is rated by respondents using a Likert scale indicator where the response "1" indicates "not satisfactory" and "10" indicates "highly satisfactory". A greater value of response given indicates that the respondent shows higher satisfaction towards the intern's performance during the industrial training.

2.3 Company's Observation

This paper focuses on the company's observation of interns' performance and adequacy of university's curriculum which are in part C and D of the questionnaires respectively. In part C, a total of 28 soft skill attributes were used to examine the intern's performance at the organization, as observed by the immediate supervisor. These attributes had been grouped into seven key skills competency i.e. (1) interpersonal skills, (2) communication skills, (3) intellectual skills, (4) initiative taking, (5) job attitude, (6) personal efficiency, and (7) leadership skills. The breakdown of soft skills asked in the questionnaire is shown in Table 1.

Table 1: Breakdown of Soft Skills

Soft Skills Observed	Details
Interpersonal skills	a) Co-operation with co-workers, supervisors and subordinates. b) Carry out instructions well. c) Ability to manage conflict that arises in working condition.
Communication Skills	a) Able to express ideas. b) Able to write good report related to his/her area of work. c) Effective listener. d) Able to communicate in English.
Intellectual Skills	a) Able to solve problem logically. b) Able to extract important information from various sources to solve problems. c) Able to make correct decision when necessary. d) Observe ethical standards in performing job. e) Has an appropriate level of information technology skill.
Initiative Taking	a) Able to memorize facts related to work. b) Able to work under minimal supervision.

	c) Able to manage time properly. d) Always find ways to improve his/her performance during job training.
Job Attitude	a) Responsible to the task given. b) Highly motivated to complete task given. c) Has a positive attitude in facing stressful situation. d) A punctual person. e) Frequency of attendance at work.
Personal Efficiency	a) Quantity of work performed is at the level of standard required. b) Quality of work produced is comparable to the accepted quality standards. c) A fast learner. d) Able to recognize job priority.
Leadership skills	a) Knows the goals of the organization. b) An emotionally stable person. c) Willing to take leadership responsibility.

In part D, the respondents were asked to assess interns within the following contexts as tabulated in Table 2.

Table 2: Adequacy of University's Curriculum

Context	Details
Task related to study	Intern is given task that is related to his/her area of study.
Intern's ability to perform task	Intern can perform tasks that are related to his/her area of study.
Intern's appearance	Intern is properly attired/has a proper appearance.
Intern's behavior	Overall, intern has a good behaviour.

The above assessment is intended to obtain company's feedback in determining graduates' readiness for industrial training and the adequacy of university's curriculum.

2.4 Data Analysis

Based on the feedback forms received from the industry, data were then input into a spread sheet. In order to prepare data for analysis, data exclusion was executed to remove records that were not useful due to missing values and incomplete data. Eleven records were removed from the data set thus leaving the number of responses to 298 where 177 were responses on diploma students and 121 responses on degree students.

3. Results and Discussion

3.1. Demographic Profile

The sample included 40.6% (n=121) respondents for degree programmes and 59.4% (n=177) respondents for diploma programmes. 133 respondents (44.6%) were males and 165 (55.4%) were female respondents. Table 3 shows the demographic profile of respondents who participated in this survey. Majority of the respondents were females from limited companies.

Table 3: Respondent's Demographic Profile

Profile	Classification	Frequency	Percentage (%)
Gender	Male	133	44.6
	Female	165	55.4
Type of company	Sole trader	14	4.8
	Private limited	46	15.9
	Partnership	9	3.1
	Limited company	120	41.4
	Others	101	34.8
Nature of company	Accounting	2	1.0
	Hospitality	3	1.5
	Manufacturing	8	4.1
	Consumer Trading	4	2.1
	Services	78	40.2
	Education	29	14.9
	Government agencies	39	20.1
	Others	31	16.0

3.2. Company's Observation on Soft Skill Assessment

The mean scores for the interns' soft skills observed by employers are calculated and the results are shown in Fig. 1. It is evident that employer's observation on degree students showed higher mean scores in all of the skill categories. In particular, both diploma and degree students obtained higher mean scores in the category of job attitude.

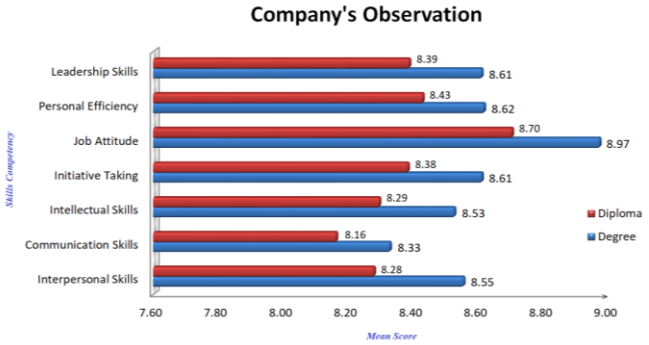


Fig. 1: Mean Scores for Soft Skills Observed

In order to determine whether the difference in mean score in the category of job attitude between diploma and degree students is significant or otherwise, a t-test analysis was performed to compare both groups. Table 4 shows the result of analysis. Diploma students scored a mean of 8.70 while degree students scored a mean of 8.97, leading to a p value of 0.04. In this case, the p value is less than the level of significant (α=0.05); therefore the result is statistically significant. This leads to a statement that degree students possess better job attitude than diploma students during industrial training in the following contexts: (1) they are more responsible to the task given, (2) they are highly motivated to complete the task given, (3) they are positive in stressful situation, (4) they are punctual and (5) they frequently come to work.

Table 4: Mean Scores and Significance

Soft Skills	Mean Score		T-test
	Diploma	Degree	
Interpersonal skills	8.28	8.55	0.06
Communication skills	8.16	8.33	0.37
Intellectual skills	8.29	8.53	0.19
Initiative taking	8.38	8.61	0.12
Job attitude	8.70	8.97	0.04
Personal efficiency	8.43	8.62	0.17
Leadership skills	8.39	8.61	0.09

A possible contributing factor for a higher rating of observation on degree students' job attitude may have association with the final year project. The authors are in the opinion that the execution of final year project might have given sufficient exposure and experience in handling the task assigned. The final year project is a two-semester work that focuses on a single topic. To complete the final year project, students must take full responsibility of the work, be highly motivated to complete the work, be positive and be well-disciplined. All these criteria relate directly to the job attitude of the students thus enabling them to develop positive skills.

This opinion is supported by Evelyn et al. [5] who suggest that some soft skills may be best acquired through training in university coursework. As a two-semester length of final project duration in the curriculum may also be seen as a training component to these students, it is believed that the training during final year

project allows for a meaningful transfer and acquisition of skills in terms of positive work attitude. In addition, as part of their project experience students should have opportunities to develop interpersonal skills as well [30]. For example, student's initiative has been one of the assessment criteria in a project [31]. No doubt, this affects student's advancement and personal development in a positive way. To further support our opinion, graduates have confirmed that the final year project provide a solid platform for the working career [32].

As can be seen from the result, communication skills for both diploma and degree graduates were rated with lowest mean scores i.e. 8.16 and 8.33 respectively. This finding is in agreement with others [6, 23] where lack of communication skills are still the number one barrier in graduates employability. Although the overall performance of the graduates was satisfactory, further improvements should be undertaken to assist graduates in developing better communication skills.

3.3. Company's Observation on Adequacy of Curriculum

The mean scores for the adequacy of curriculum were calculated and the results are shown in Fig. 2. It can be seen that intern's behaviour for both diploma and degree programs achieved highest mean scores. Nevertheless it can be observed that degree students (9.30) obtained a higher score than diploma (9.06). Degree students obtained higher mean scores for all of the criteria except in *tasks related to study*.

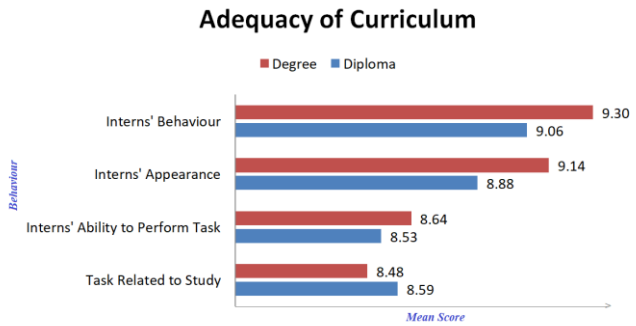


Fig. 2: Mean scores for adequacy of university's curriculum

Overall, the mean scores showed that the adequacy of university's curriculum in preparing interns for industrial training was satisfactory. Most importantly, respondents were very satisfied with interns' behaviour during the industrial training. However, respondents' observation revealed that there is a slight difference between degree and diploma students in their ability to perform tasks and the relatedness of job scope given during the training. The job scope was found to be more related to diploma students than degree students.

Nevertheless, the results and discussion in this study should be interpreted with caution. It must be acknowledged that this study is concerned with seven key soft skills competency possessed by interns in various industries. Yet it is possible that there are exists a different dimension of job attitudes when working in a particular industry. In addition, variations in the job scopes assigned to interns during industrial training may have certain impact on their job attitudes. As job attitudes are often associated with outcomes such as work performance and absenteeism, a thorough investigation in the context of possible discrepancies between degree and diploma interns should be carried out in that category.

As for the graduates, understanding the industry's expectations would enable them to be aware of their weaknesses and consequently take necessary action to acquire industry-relevant competencies during their study at the university [19]. Undoubtedly, having possessed industry-relevant competencies would enhance the employability of university graduates with the following major benefits [17]; enhance competitiveness of the industry and broader career progression opportunities for the graduates.

4. Conclusion

Industrial training offers opportunities for graduates to apply their skills acquired during university years into practice at the workplace. To ensure that the graduates are adequately competent, feedbacks from industry are continuously required by the university. Most importantly, the feedback can be considered as a benchmark to assess the competency levels of university graduates. Understanding industry's feedback would allow the university to enrich its academic curricula to meet the need of the industry and remains relevant [2].

This paper has highlighted the differences in soft skills' assessment between diploma and degree students during their placement at selected organizations. It was found that job attitudes between diploma and degree students during their industrial training differ significantly. It showed that degree students possess better job attitude than diploma students. Many factors may contribute to this and one possible reason may be due to the experience of degree students in project management tasks such as in a final year project. Future work from this study will involve determining the possible association between job attitudes of degree students with project management skills.

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