

THE INDUSTRIES AND STUDENTS PERCEPTIONS ON INTEGRATED HUMAN DEVELOPMENT MODEL

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ABSTRACT

The field of technology and engineering now need engineers who well equipped with the human skills. Having technical skills alone is not enough for the workers to face the challenges in today's business. Therefore it is vital for Higher Learning Institutions to emphasize on the development of human skills together with technical skills. This paper will explain the concept of an integrated model of student development. This model integrates both technical skills and human skills in the curriculum of the university. This paper describes findings from the survey with industries on their perceptions and satisfaction towards students' soft skills competencies during their internship programme. It also discusses about the students' perceptions on the importance of soft skills at the work places. This research concludes that the integrated model is applicable in developing graduates soft skills.

Key Words: Human skills, student technology, technical skills, soft skills, development.

1. The Concept of Soft Skills

Soft skills refer to the ability of individual to lead the job, work in team, abide to laws and regulations as well as the ability to learn and communicate effectively. Soft skills are also referring to human skills. According to Mahalle (2002) Human Skills refer to communication skills, leadership, team working, helicopter view, creativity, 'can do' attitude and a few other human skills that are important for employees to survive in business and in the borderless job market. These skills are highly demanded because the nature of business has changed drastically from closed market to borderless market. Competency in soft skills is important as well as technical skills. Some scholars' emphasize that soft skills are more important than technical skills. At the work places, the worker needs to portray their ability to complete their technical work according to the procedures and standard of the industries and at the same time are able to communicate, work in team and follow the law and procedures in the

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workplaces (Cowie, 2003: 256). A survey conducted by Central Oklahoma Workforce in 2002 found that local employers rank ethical standard, integrity and interpersonal communication as the most important traits. The survey also suggested that Human Skills are vital to the survival of business in this century. According to Aroon (1997: 52) soft skills training should provide hands on experience to help participant practices the theory that they have learned from soft skills training session.

2. The Concept of Integrated Human Development Model

Since the skills are needed for employees are not only in technical skills, their performance in soft skills is also important at the work places. For that, graduates should be equipped with soft skills before the day of graduation. They must portray their competency in both technical and soft skills. Studies show that incorporating soft skills are crucial in the university curriculum (Nasser, 2005: 124). For that, tasks to develop graduates soft skills are important to the university and faculty members. The curriculum of the university should emphasis on the development of soft skills as well as technical skills. The curriculum should integrate between these two disciplines within their academic curriculum. The integration of these two should come across formal teaching in the classroom as well as students campus life. However, the development of soft skills should be more on informal curriculum. The skills should be developed while students in their hostels and also during their involvement in sports and other students club activities. This process is the most suitable technique in designing soft skills curriculum for engineers (Elmuti, 2004: 439)

This model refers to the integrated process of student development program in higher learning institutions. The first emphasis of the model is on acquiring technical skills such as engineering, chemistry and business. Therefore, the curriculum should provide adequate knowledge and skills to the students to equip themselves with necessary contents of engineering, chemistry or other technical field. The other emphasis covers the development of the student in Human Skills such as positive attitudes, team working, leadership and communication. The focus of the integrated model is to equip the students with technical knowledge and skills and at the same time they are trained to be competent in human skills as required by the industries.

Figure 1, (See: p. 485) illustrates the concept of integrated human development model. It starts with technical knowledge. The students learn the theory and process in specific technical disciplines such as engineering, law, economics and computer sciences. At the same time they also learn skills which are related to the technical skills such as computer programming, operating robot arm, assembling integrated circuit. In integrated model, the students also learn about soft skills. They acquire knowledge in leadership, team working, communication and ethics. At the same time they learn how to practice the soft skills theory. Their implementation is not only end after classroom session.

Students need to practice soft skills within non academic environment. They need to implement the soft skills which they have acquired in the classroom and use it outside of the classroom. They are required to practice regularly in order to familiarize themselves with soft skills elements. This integrated framework is designed to inculcate the development of soft skills in formal and informal teaching environment. The implementation of soft skills does not only occur in non formal classroom, however, inside the classroom students also need to practice human skills which they have acquired from soft skills subject. They need to communicate wisely within peers in classroom, able to present ideas in front classroom, abide the laws and regulations of the university inside classroom. The lecturer will evaluate students' performance in soft skills in the classroom as well as evaluating technical competency for specific technical subject. This integrated model gives students ample time to develop themselves in soft skills throughout their learning in the university.

3. Formal and Informal Learning Environment for Behavior Development

For the development of behavior, it starts with knowledge. The students are required to understand basic concept of soft skills. They need to learn basic theories in soft skills. The theories act as the basis of action. However, to help students understand more about soft skills, they need to do exercises in order to activate their psychomotor in understanding the meaning of those theories in soft skills. As an example, the students learn the theory of good presentation skills. The lecturer teaches processes and techniques in presenting ideas. After that, the lecturer should ask students to practice their presentation skills that they have learnt from the theories. After doing some exercises, then the students are able to learn and understand the meaning of effective presentation skills.

Acquiring soft skills in the classroom is not enough. Students need to practice the skills they have acquired very often to help themselves become more familiarized with soft skills. Thus, presentation skills that they have learnt should be practiced regularly outside of the classroom. They have to use the skills whenever they lead any students' club activities, managing sport tournaments, involving in the meetings and few other places. The practices should be informal for the development of their behavior. The concept and implementation are important to instill soft skills as their behavior. This is because acquiring human skills is more effective in a non formal setting rather than a formal setting.

Another example of this is in leadership skill. The students need to learn techniques and processes in leadership. They need to learn basic theories in leading, managing team, doing planning, coordinating group work and many more. After that, they need to do some exercises to implement the knowledge they have learnt based from those theories. Practicing the leadership skill will help students to be better in understanding the concept and process in leadership

skill. After that, students should implement their skills acquired in their daily life setting. They practice leadership skill within an informal setting and outside of the classroom. The integration will help students better understand the concept and process of leadership.

4. Data Collection Method

This study uses questionnaire as an instrument. The first questionnaire is to explore industries perceptions consist of four domains in soft skills that are leadership, learning capability, values and team working. Each domain explores different aspect of soft skills. As for values, it explores six attributes, learning capability explores five attributes, leadership explores five attributes and team working explores nine attributes. The scale for questionnaire uses “likert type” ranging from very satisfied to very dissatisfy. The questionnaire is then given to the supervisors whose supervise final semester students during internship course. The students have to complete six month of internship as an academic qualification to graduate in engineering degree. The questionnaire is given to the supervisor at the end of supervision period for each student. For this research, the students attached to different industries. Only one supervisor will supervise the students’ performance during six months on internship programme. When answering the questionnaire, supervisor has to answer without any prejudice and influence from the students that they are being supervised. They have to fill in the questionnaire freely without any external influence.

For distribution of the questionnaire, researcher gets assistance from lecturers within the same university to give out this questionnaire to the supervisors. During their visit to the industries where the students are being attached to, the lecturer brings the questionnaire and then gives this questionnaire to the supervisors. The supervisors are asked to complete the questionnaire within 15 to 25 minutes and return the questionnaire back to the lecturer. When they are filling in the questionnaire, supervisors need to answer the questionnaire based on what they have perceived of the students’ achievement in soft skills aspects. After completing the questionnaire, supervisors will give back the questionnaire to the lecturer. For this part, there is no interference from the students and also lecturer. After coming back from the industries visit, the lecturers need to give back the questionnaire to the researcher. The data gathered from the questionnaire are then transferred to computer for analysis.

The second questionnaire is to explore students’ perceptions on soft skills which they have learnt during their learning day in the campus. The questionnaire consists of 12 items. Items of the questionnaire focus on students’ perceptions on soft skills training that they get during their campus time. It uses “likert type” of question ranging from very important to not important. Same data collections and techniques employed to the supervisor are used with the

students. The questionnaire is brought by the lecturer to be given back to the students during their internship time. Students are asked to answer the questionnaire freely without any influence from lecturer as well as supervisor. They are asked to complete the questionnaire within 15 to 20 minutes. After completing the questionnaire, the scripts will be given to the lecturer and then bring it back to the campus for data analysis.

5. Industries Perceptions on Soft Skills Achievement

The finding from the survey explores six items in values. Please refer to **Figure 2 (See: p. 485)**. Those six items in values are ability to display high standards of attendance and punctuality, ability to adhere to the rules in the workplaces, ability to adhere to due dates, ability to decide work priorities, ability to work hard and complete tasks gives and ability to assess and develop own knowledge, skills and abilities. The finding shows that the industries are satisfied with university students' soft skills in values. There is no industry that does not satisfy with the values portrayed by students' soft skills during the internship programme.

However, the level of satisfaction of industries does not reach the highest level for requirement of those industries. Almost every item shows that the level of values of universities students should be upgraded to meet the highest standard set by industries. The findings give indication to the management of the faculty that the integrated human development model does work in developing students' soft skills. However, the level should be upgraded to meet the standard. From the item, it shows that the level of students' ability to adhere to the rules and ability and decide work priority is higher compared to the other item. Maybe this is because of the training gained during their study at the university level which could teach them to abide those rules and regulations of the university and also give priorities to the important things first. In the integrated human development programme, one of the items evaluated by lecturer in the classroom is the ability of those students to abide to the rules and regulations of the universities. For those who do not compel to the rules, they will be given "incompetent" result in their soft skills. The incompetent students have to undergone soft skills clinic to improvise their soft skills competencies.

The finding on learning capability shows different result as compared to values item. Please refer to **Figure 3 (See: p. 486)**. 42 % of the respondents do not satisfy with the ability of students on showing their effort in improving quality of work. 43 % of the respondents feel that the students are not able to apply their knowledge and skills at the work places which they have acquired during the university level. However the other three items on the ability of students to keep up with challenges in completing tasks assigned, ability to update with changes required by industries and ability to equip themselves with relevant skills are needed by industries shows good responses. The findings show that the students need to give more exposure in industries related works in

order to let them be ready and alert with the technologies and requirement needed by industries. The curriculum of the university should give more emphasis on real industries problems and how to deal with those complexities. For that, the lecturer needs to have more exposure on the problems faced by industries than include the problems in the curriculum.

However the result shows that the students' learning capability meets the requirement standards of industries. The weaknesses from this finding should make the university and faculty members to be more alert in improving their curriculum to meet the standard set by industries. Result of the overall items in learning capability shows that the curriculum of integrated programme should be improved. This is because the level of "very satisfied" of the item is low as compared to "satisfied" item. The integrated human development shows that the programme is working, but it needs to be upgraded to improve the quality of the programme.

There are five items measure in leadership skills: the ability to initiate action and make decisions, to facilitate and guide the actions and thinking of others, to act as motivator to the followers, to take challenge as means of improvement and to create trust among subordinates. Please refer to (**Figure 4, See: p. 486**) Overall the industries satisfied with the students' performance in leadership skills. The highest score is 86 % for both abilities to initiate action and make decision in order to facilitate and guide the actions and thinking of others. It follows with the other two abilities which are the ability to take challenge as means of improvement and the ability to create trust among subordinates are 71 %. The lowest score is 43 % for the ability to act as motivator to the followers. Perhaps this was due to the age factor that reflects maturity level and lack of working experience.

Based on the finding, the industries seem to acknowledge students' leadership ability except for the ability to act as motivator to the followers that represent the dissatisfaction level which is 43 %. This should be taken into consideration by the management of the faculty to be highlighted and improvised. The management should emphasize more on the other four abilities the ability to take challenge as means of improvement and to create trust among subordinates with 29 %, then 14 % each for the ability to initiate action and make decisions, to facilitate and guide the actions and thinking of others as well as the ability to act as the motivator to the followers.

Findings from the survey show that there are nine items measure in team working skills; the ability to cooperate in group work, to motivate and encourage others to participate, to help team members function effectively, to achieve goals, to focus on needs and emphasize common ground, to make decision or support consensus decision, to complete assigned tasks, to develop talent of the team members, to provide performance feedback of team members and to value diversity of team members. Please refer to (**Figure 5 & 6. See p.**

487) Overall the industries satisfied with the students' performance in team working skills. The highest score is 86 % for both abilities to focus on needs and emphasize common ground, to make decision or support consensus decision and to develop talent of the team members. It follows with the other three abilities which share the same scores of 71 % as the following abilities: the ability to cooperate in group work, to motivate and encourage others to participate, and to value diversity of team members. The abilities of helping team members function effectively and making decision or support consensus decision score 57 %. The second lowest score is the ability to complete assigned task with 43 % and the lowest score is 42 % for the ability to provide performance feedback of team members.

Based on the industries' feedbacks on the students, they rated the nine attributes as follows; 57 % on the ability to complete assigned tasks, 29 % rated for five attributes which are the ability to cooperate in group work, to help team members function effectively, to make decision or support consensus decision, to provide performance feedback of team members and to value diversity of team members. The other three attributes score only 14 % on the ability to motivate and encourage others to participate, to focus on needs and emphasize common ground and to develop talent of the team members. The management of the university should pay more attention to polish team working skill particularly on these four attributes; the ability to provide performance feedback of team members with 29 %, the other three are the ability to motivate and encourage others to participate, to help team members function effectively and to make decision or support consensus decision with 14 %.

6. Students Perceptions on Integrated Human Development Programme

Findings from students' perceptions, there are twelve items; presentation skills, written skills, oral communication, ability to manage one's own learning, ability to manage multiple task, time management, team work, leadership, negotiation, networking, problem solving and analytical ability. In the questionnaire, students rate those twelve items using five indicators range from very important, important, somewhat important, not too important and not at all important. The findings shows that there are two pertinent skills considered by students as very important with score of 71 % on oral communication and time management. Next, with score of 64 % is a presentation skill. It follows by the ability to manage multiple tasks with score of 57 %. There are three skills consider important with score of 50 % starting with team work, problem solving and analytical ability. At fifth important position are three skills; the ability to manage one's own learning, leadership and networking with score of 36 %. Lastly, they consider two skills of written communication and negotiation with equal score of 29 %. Please refer to **Figure 7 & 8. (See: p. 488)**

Students classify important skills as the followings; the ability to manage one's own learning 64 %, written skills, leadership and negotiation 57 %, team

work 50 %, ability to manage multiple task 43 %, presentation skills and problem solving 36 %, oral communication, time management and analytical ability 29 %, and networking 14 %. There are six skills for somewhat important indicator that are networking 36 %, problem solving and analytical ability both score 14 % and 7 % for other three skills; written communication, leadership and negotiation. Out of these twelve skills, three skills fall under not too important category; 14 % for networking and 7 % for negotiation and analytical ability. Overall, these twelve skills are relevant to the students' performance at the workplace because there is no result falls under not at all important indicator.

CONCLUSION

As conclusion to the research, this study shows that the integrated model of human development in the university are applicable and producing graduates with soft skills. Findings from industries show that they are satisfied with the soft skills of graduates. However, the university should improve the curriculum due to the level of satisfaction do not reach the highest standard as being demand by industries. The process inside the integrated model should be reviewed to upgrade the level of satisfaction among industries. Although the students perceive soft skills as very important to them at the workplaces, their awareness on the importance of soft skills should start from the beginning of their study at the university level. The early detection process of soft skills will help university administrators to improve the way of teaching not only for technical and academic performance, but also include soft skills as one of the important elements in the universities curriculum. This study does not reach the national level of survey due to cost and time limitation. However, the result can be used as the preliminary study to generalize the findings with large population of the country. To further understand soft skills issues among graduates, study needs to be carried out to explore other components of soft skills as being demanded by industries. Improvement of the soft skills curriculum should be equipped to the graduates with necessary competency for the betterment of our nation.

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