# CHAPTER 5

# DATA ANALYSIS AND FINDINGS

## 5.1 Introduction

This chapter presents the results for analysis and findings referring to the conceptual framework. The findings are presented according to the research questions. This chapter aims to present the findings of this study on the first, second and third research questions. The research objectives are as below:

1. To elicit higher education stakeholders' understanding of knowledge management practices, their feedback of ICT programme instruction and the curriculum review process.
2. To explore the higher education stakeholders' perception of the employability of ICT graduates.
3. To capture the requirements of a KMS that can support the employability of ICT graduates and the improvement of curriculum review process.

In order to present the findings for the above research objectives, the study answers the research questions as below:

1. How do Knowledge Management practices influence the ICT programme instruction and curriculum review process?
2. What are the stakeholders' perceptions of the employability of ICT graduates?
3. How could knowledge management system support the employability of ICT graduates and the improvement of curriculum review process?

The results presented in this chapter were obtained, based on the research objectives and the conceptual framework as discussed in Chapter 3. The first part of the chapter provides a background of the respondents, and a methodological approach to the study,

while the second part provides a detailed presentation of data based on descriptive statistics and supported by the interviewing results. The use of a mixed method was fundamental for getting the breadth and depth of understanding on using Work System Theory (WST) in a KM tool for curriculum review process in HEIs as discussed in Chapter 3.

## 5.2 Findings of the Survey

The survey aims to understand the stakeholders' view on how Knowledge Management practices influences the ICT programme instruction and curriculum review process. Besides that, it is also important for the study to know the stakeholders' perceptions of the employability of ICT graduates and to capture the requirements of knowledge management system that can support the employability of ICT graduates and the improvement of curriculum review process. The survey presents the descriptions and analysis of data gathered through questionnaires from one hundred and forty seven (147) graduated students, two hundred and forty six (246) current students, one hundred and fifty two (152) employers, twenty (20) academic and twelve (12) non-academic staff.

### 5.2.1 Demographic Analysis

A total of two hundred and twenty eight (228) questionnaires were sent to graduated students. However, only one hundred and forty seven (147) respondents completed and returned usable instruments. Sixty eight (68) graduated responders do not return and thirteen (13) questionnaires had incomplete information which rendered them unusable. This represented 64.47% of the total sample of one hundred and forty seven (147) graduated students' responders. A total of two hundred and eighty five (285) questionnaires were given to current students either in their classroom with their lecturer's permission or outside the classroom. However, thirty nine (39) questionnaires

had incomplete information which rendered them unusable. This represented 86.32% usable response rate of the total sample of two hundred and forty six (246) current students' responders.

A total of thirty five (35) questionnaires were given to academic staff. However, nine (9) academic staff does not return and six (6) questionnaires had incomplete information which rendered them unusable. A total of nineteen (19) questionnaires were given to the non-academic staff. However, five (5) non-academic staff does not return and two (2) questionnaires had incomplete information which rendered them unusable. A total of two hundred and seven (207) questionnaires were sent to employers. However, only one hundred and fifty two (152) respondents completed and returned usable instruments. Seventy seven (77) employers do not return and eight (8) questionnaires had incomplete information which rendered them unusable giving 64.14% usable response rate.

The results in Table 5.1 shows the respondents (students) demographic details such as the race, country of origin, family background, combined income of both parents (per month), course enroll, level of education and Cumulative Grade Point Average (CGPA). Among the graduated students who participated in this research, 68.7% were female and 31.3% were male. Among the current student, 67.5% were female and 32.5% were male respondents. The graduated students (respondents) identified their race as 74.8% Malay, 16.3% Chinese, 3.4% Indian, and 5.4% others.

On the other hand, the current students (respondents) identified their race as 59.3% Malay, 22.8% Chinese, 6.9% Indian, and 10.9% others. They come from various academic backgrounds, in terms of academic performance as shown in Table 5.2. Majority of the graduated students and currents students' family background are diploma level and their family income level is between RM3000 to RM5000 per month. Majority of the graduated students who participated in this study are with Information Science

Table 5.1: Demographics of the Respondents (current students and graduated Students)

| | Current Students (n = 246) | | Graduated Students (n = 147) | |
|---|---|---|---|---|
| **Demographic Variables** | **Frequency** | **Percentage** | **Frequency** | **Percentage** |
| Gender | | | | |
| Male | 80 | 32.52 | 46 | 31.29 |
| Female | 166 | 67.48 | 101 | 68.71 |
| Total | 246 | 100.00 | 147 | 100.00 |
| Ethnic | | | | |
| Malay | 146 | 59.35 | 110 | 74.83 |
| Chinese | 56 | 22.76 | 24 | 16.33 |
| Indian | 17 | 6.91 | 5 | 3.40 |
| Others | 27 | 10.98 | 8 | 5.44 |
| Total | 246 | 100.00 | 147 | 100.00 |
| Country Of Origin | | | | |
| malaysian | 223 | 90.65 | 136 | 92.52 |
| others | 23 | 9.35 | 11 | 7.48 |
| Total | 246 | 100.00 | 147 | 100.00 |
| Family Background | | | | |
| PhD | 1 | 0.41 | 2 | 1.36 |
| Masters | 7 | 2.85 | 8 | 5.44 |
| Degree | 88 | 35.77 | 20 | 13.61 |
| Diploma | 94 | 38.21 | 59 | 40.14 |
| Secondary School | 27 | 10.98 | 34 | 23.13 |
| Primary School | 16 | 6.50 | 19 | 12.93 |
| Not literate | 13 | 5.28 | 5 | 3.40 |
| Total | 246 | 100.00 | 147 | 100.00 |
| Combined Income (Parents) | | | | |
| < RM 1500 | 29 | 11.79 | 9 | 6.12 |
| >= RM 1500 & < RM3000 | 78 | 31.71 | 55 | 37.41 |
| >= RM 3000 & < RM5000 | 102 | 41.46 | 60 | 40.82 |
| >=RM 1500 | 37 | 15.04 | 23 | 15.65 |
| Total | 246 | 100.00 | 147 | 100.00 |
| Course Enroll | | | | |
| BSc (Artificial Intelligent) | 44 | 17.89 | 11 | 7.48 |
| BSc (Software Engineering) | 22 | 8.94 | 19 | 12.93 |
| BSc (Computer Network & System) | 27 | 10.98 | 20 | 13.61 |
| BSc (Mgt Information System) | 39 | 15.85 | 6 | 4.08 |
| BSc (Information Science) | 42 | 17.07 | 44 | 29.93 |
| BSc (Multimedia) | 37 | 15.04 | 28 | 19.05 |
| BSc (Management) | 35 | 14.23 | 19 | 12.93 |
| Total | 246 | 100.00 | 147 | 100.00 |
| Qualification | | | | |
| Degree | 246 | 100 | 136 | 92.52 |
| Masters | 0 | 0 | 11 | 7.48 |
| Total | 246 | 100.00 | 147 | 100.00 |
| CGPA | | | | |
| <= 2.5 | | | 27 | 18.37 |
| > 2.5 & < 3 | | | 96 | 65.31 |
| >= 3 & <= 3.5 | | | 19 | 12.93 |
| > 3.5 | | | 5 | 3.40 |
| Total | 246 | 100.00 | 147 | 100.00 |

(29.9%) background and majority of the current students are from Artificial Intelligent (17.9%) background. Besides that, majority of the participants were degree students. Among the graduated students who participated in the questionnaire, majority of them scored between 2.5 to 3 point for their CGPA in their studies. That shows, majority of the students are average level students in their studies.

The results in Table 5.2 shows the HEIs staff respondents' demographic details such as the age group, highest education, job position, working experience and knowledge on KM. Majority of the academic and non-academic respondents are matured. Most of the academic respondents are PhD holders and majority of the non-academic staff are diploma holders. Majority of both the staff groups are experienced responders. Both academic and non-academic staffs have moderate knowledge on KM. This is very important to provide valuable feedback to this study. A total of thirty five (35) questionnaires were given to academic staff. However, nine (9) academic staff does not return and six (6) questionnaires had incomplete information which rendered them unusable. A total of nineteen (19) questionnaires were given to the non-academic staff. However, five (5) non-academic staff does not return and two (2) questionnaires had incomplete information which rendered them unusable.

Among the respondents, 50.0% of the academic staff are from the age group between 36 to 40 and 58% of the non-academic staff are from the age group of 30 and above. Among the academic staff who responded in the questionnaire, the highest consist of 90% of PhD degree holders and 10% of Masters Degree holders. Among the academic staff, majority of them (40%) have 11 to 15 years of working experience. On the other hand, 75% of the non-academic staff has 0 to 5 years of working experience.

Finally, a total of two hundred and seven (207) questionnaires were sent to employers. However, only one hundred and fifty two (152) respondents completed and returned usable instruments. Seventy seven (77) employers do not return and eight (8) questionnaires had incomplete information which rendered them unusable giving 64.14% usable response rate.

Table 5.2: Demographics of the Respondents (academic staff and non-academic staff)

| | Academic Staff ( n = 20) | | Non-Academic Staff ( n = 12 | |
|---|---|---|---|---|
| | Frequency | Percentage | Frequency | Percentage |
| Age | | | | |
| 30 and above | 4 | 20% | 7 | 58% |
| 31-35 | 1 | 5% | 1 | 8% |
| 36-40 | 10 | 50% | 0 | 0% |
| 41-45 | 5 | 25% | 4 | 33% |
| Total | 20 | 100% | 12 | 100% |
| Highest Education | | | | |
| PhD | 18 | 90% | 0 | - % |
| Masters | 2 | 10% | 0 | - % |
| Degree | 0 | - % | 2 | 17% |
| Diploma | 0 | - % | 7 | 58% |
| Others | 0 | - % | 3 | 25% |
| Total | 20 | 100% | 12 | 100% |
| Working Experience | | | | |
| 0 – 5 years | 3 | 15% | 9 | 75% |
| 6 – 10 years | 6 | 30% | 1 | 8% |
| 11 – 15 years | 8 | 40% | 0 | 0% |
| 16 – 20 years | 3 | 15% | 2 | 17% |
| Total | 20 | 100% | 12 | 100% |

The results in Table 5.3 show the employer respondents' demographic details such as the gender, years of working, organization origin and number of employees. The respondents consist of 55.9% male and 44.1% female respondents with majority of 0 to 10 years working experience. Most of the respondents are attached to local organization with 76 to 100 employees in their organization.

Table 5.3: Demographics of the Respondents (Employers)

| | Employers (n = 152) | |
|---|---|---|
| **Demographic Variables** | **Frequency** | **Percentage** |
| Gender | | |
| Male | 85 | 55.92 |
| Female | 67 | 44.08 |
| Total | 152 | 100.00 |
| Working Experience | | |
| 0-10 | 88 | 57.89 |
| 11-20 | 53 | 34.87 |
| > 21 | 11 | 7.24 |
| Total | 152 | 100.00 |
| Organization Origin | | |
| Local | 135 | 88.82 |
| International | 17 | 11.18 |
| Total | 152 | 100.00 |
| No. of Employees | | |
| 0 – 10 | 15 | 9.87 |
| 11 – 25 | 25 | 16.45 |
| 26 – 50 | 33 | 21.71 |
| 51 – 75 | 26 | 17.11 |
| 76 – 100 | 34 | 22.37 |
| More than 100 | 19 | 12.50 |
| Total | 152 | 100.00 |

### 5.2.2 Higher education stakeholders understanding of knowledge management practices, their feedback of ICT programme instruction and curriculum review process.

As shown in the conceptual framework based on the Work System theory (WST), in order to see the importance of implementing KM tool for curriculum review process in HEIs, firstly, there is a need to study the stakeholders' understanding of KM practices, their feedback of ICT programme instruction and curriculum review process. As discussed in Chapter 2, the layers of the conceptual framework comprise of participants (layer 1), information (layer 2), technology (layer 3), process and activities (layer 4);

product and services (layer 5); customers (layer 6), outcomes (layer 7) and the top most layer is the ultimate goal (layer 8) of the study.

Firstly, there is a need to understand the participants of this study, as shown in Layer 1. Although there are many participants involve in this study as discussed in Chapter 2, viz direct participant and indirect participant, however those direct participants that involve in this study are the current students, graduated students, HEIs and employers. Once the participants are selected for the study, there is a need for in depth study on the type of information provided by the participants as discussed in layer two (information) of the conceptual framework. The current students will be giving feedback through questionnaires and interviewing based on their current experience as an existing student in the HEIs and their future expectations from the HEIs.

The graduated students will be giving feedback based on their previous experience as a student and the issues that they faced in the process of finding their job after graduation and about their current job. HEIs will be providing information on their curriculum system, KM practices and employment issues through questionnaires and will get in depth information through interviewing. Finally, the employers as a participant for the study will be providing information on the job vacancies, skill and knowledge that is required in the job market and employability issues. Further information is gathered through interviewing to get a better understanding of the study.

As shown in the conceptual framework in Chapter 2, once the information required are compiled from the participants, then HEIs need to decide on the tools and techniques required to capture all the information provided by the participants. In this study, a KM tool will be developed based on the information provided by the respondents or participants for curriculum review process as shown in Layer 3 of the conceptual framework. Layer one, two and three of the conceptual framework are clearly discussed in objective one of the study. In this study, questionnaires were the

primary source used to answer the research question. It is supported with interviewing results. It focuses the importance of KM tool in HEIs in for curriculum review process.

In the questionnaire, the respondents were asked to what extend they understand the term Knowledge Management. A rating scale ranging from not familiar, little (Not much knowledge on KM), moderate (accepted rate of understanding on KM), good and great (good knowledge on KM) was used. In calculating the mean and standard deviation, the following scores were used" 'Not Familiar'=1, 'Little'=2, 'Moderate'=3, 'Good'=4 and 'Great'=5.

Based on respondents' feedback, the current students rated their understanding on KM as 'Moderate' to 'Good' with a mean of 3.86 and standard deviation of 0.50. On the other hand, the graduated students rated their understanding as 'good' with a mean of 3.99 and standard deviation of 0.76 as shown in Table 5.4. HEIs rated their understanding on KM as 'moderate' to 'good' with a mean of 3.72 and standard deviation of 0.77 and finally the employers rated as their understanding on KM as 'good' with a mean of 4.12 and standard deviation of 0.63 as shown in Table 5.5.

Majority of the respondents agreed when they were asked whether KMS could help HEIs to improve their curriculum review process. This was supported by current students with a mean of 1.05 and standard deviation of 0.22, mean of 1.08 and standard deviation of 0.27 for graduated students.

The HEIs agreed that KMS could help HEIs to improve their curriculum review process with a mean of 1.06 and standard deviation of and a mean of 1.07 and standard deviation of 0.26 for employer as shown in Table 5.5. As we see from the results, almost all the respondents have a minimum of moderate knowledge on KM. These shows the bases of the participants are accepted to comments on the study.

Table 5.4 Current Student and Graduated Student feedback on KM

| No. | Items | Current Students | | Graduated Students | |
|---|---|---|---|---|---|
| | | Mean* | Standard Deviation | Mean* | Standard Deviation |
| 1 | To what extend you understand the term "Knowledge Management" | 3.86 | 0.50 | 3.99 | 0.76 |
| 2 | Do you agree that KMS could help HEI to improve their curriculum reviewing process? | 1.05 | 0.22 | 1.08 | 0.27 |

Table 5.5 HEIs and Employer feedback on KM

| No. | Items | HEI | | Employer | |
|---|---|---|---|---|---|
| | | Mean* | Standard Deviation | Mean* | Standard Deviation |
| 1 | To what extend you understand the term "Knowledge Management" | 3.72 | 0.77 | 4.12 | 0.63 |
| 2 | Do you agree that KMS could help HEI to improve their curriculum reviewing process? | 1.06 | 0.25 | 1.07 | 0.26 |

In addition to that, the respondents (graduated students and current student) were asked on their overall feedback on the HEIs curriculum focusing on the class discussion on task, academic support, organization and management; course content and structure; course delivery, workload, assessment, intellectual motivation, personal development and work placement as shown in Table 5.6. A rating scale ranging from strongly disagree and disagree (not satisfied), neither agree nor disagree (in neutral), agree (satisfied) and strongly agree (very satisfied) was used. In calculating the mean and standard deviation, the following scores were used; 'strongly disagree'=1, 'disagree'=2, 'neither agree nor disagree' =3, 'agree'=4 and 'strongly agree'=5. Based on the graduated students' feedback on keeping class discussion on task, the mean for graduated students was between 2.27 to 3.31 and the standard deviation was from 0.45 to 1.11 respectively. On the other hand, for the current students, the mean was between 2.41 to 3.63 and the standard deviation was from 0.80 to 1.04. For the graduated students, the minimum mean was to choose assessments of their knowledge which were

# Table 5.6: Issues in Current Curriculum

| No | Item | Graduated Students | | Current Students | |
|---|---|---|---|---|---|
| | | Mean* | Standard Deviation | Mean* | Standard Deviation |
| 1 | ***Kept class discussion on task.*** | | | | |
| 2 | Posed questions (tutorials, quizzes and test) to draw out my knowledge of the topic. | 3.31 | 1.11 | 4.20 | 0.98 |
| 3 | Encouraged classroom cooperation. | 3.06 | 1.11 | 3.63 | 0.77 |
| 4 | Challenged me intellectually. | 2.48 | 0.79 | 2.53 | 1.04 |
| 5 | Encouraged deep thinking such as summarizing, synthesizing, analyzing, and applying information. | 2.39 | 0.49 | 2.41 | 0.80 |
| 6 | Choose assessments of my knowledge (exams, quizzes, papers, or projects) which were relevant to the course learning objectives. | 2.27 | 0.45 | 3.37 | 0.86 |
| | ***Academic support*** | | | | |
| 7 | I have received sufficient advice and support about my studies from my HEI | 2.39 | 0.49 | 2.08 | 0.37 |
| 8 | I know what I'll be learning under my course | 3.20 | 0.49 | 2.09 | 0.38 |
| 9 | I got a clear picture on the type of job that I can apply to after my studies | 3.05 | 0.83 | 3.38 | 0.49 |
| 10 | My HEI provided me with good information to make my study choices | 2.41 | 0.88 | 3.65 | 0.48 |
| 11 | My HEI advised me based on my interest on the study | 3.41 | 0.57 | 3.50 | 0.50 |
| | ***Organization and management*** | | | | |
| 12 | Any changes in the course or teaching have been communicated effectively. | 3.26 | 0.70 | 3.21 | 0.41 |
| 13 | The course is well organized and is running smoothly | 3.56 | 0.50 | 3.26 | 0.44 |
| 14 | I was told the subjects that I need to take and the objectives and aims of each subject at the beginning of my study. | 2.28 | 0.58 | 3.30 | 0.46 |
| | ***Course Content and Structure*** | | | | |
| 15 | All the compulsory modules are relevant to my course | 2.42 | 0.54 | 3.25 | 0.43 |
| 16 | The elective (optional) subject(s) was helpful especially to improve my soft skills. | 2.30 | 0.46 | 3.11 | 0.32 |
| 17 | My course assessed both my understanding and skills | 2.84 | 0.36 | 3.09 | 0.29 |
| 18 | Gave opportunity for me to work on real life issues/problems | 2.24 | 0.62 | 2.18 | 0.39 |
| 19 | Giving me the confidence in making decision about information, ideas, arguments or issues. | 3.39 | 0.52 | 2.31 | 0.46 |
| | ***Course Delivery*** | | | | |
| 20 | Learning materials made available on my course have enhanced my learning | 3.49 | 0.50 | 3.07 | 0.87 |
| 21 | Most of the lecture notes are available online when I need them | 2.29 | 0.66 | 3.00 | 0.67 |
| 22 | The range and balance of approaches to teaching has helped me to learn | 2.31 | 0.46 | 2.38 | 0.49 |
| 23 | The delivery of my course has been stimulating | 2.33 | 0.60 | 2.22 | 0.41 |
| 24 | My learning has benefited from modules that are informed by current research | 2.66 | 0.59 | 2.21 | 0.41 |
| 25 | I learned what is asked in the job market | 2.61 | 0.49 | 2.77 | 0.42 |
| 26 | Practical activities on my course have helped me to learn and improve myself better. | 2.27 | 0.44 | 2.91 | 0.29 |
| | ***Workload*** | | | | |
| 27 | Duration of courses taught was manageable | 3.10 | 0.57 | 3.52 | 0.72 |
| 28 | The workload on my course is manageable | 2.88 | 0.71 | 3.51 | 0.76 |
| 29 | I am generally given enough time to understand the things I have to learn on each subject | 2.29 | 0.56 | 3.28 | 0.89 |
| 30 | I improved my time-management while managing my workload | 2.19 | 0.73 | 3.64 | 0.63 |
| 31 | My workload helped me to manage my work stress | 2.58 | 0.50 | 3.67 | 0.58 |
| | ***Assessment*** | | | | |
| 32 | All my courses tested what I have understood rather than what I have memorized | 2.61 | 0.49 | 3.22 | 0.76 |
| 33 | I was tested both on theoretical and practical on my technical subjects | 2.67 | 0.69 | 3.06 | 0.71 |
| 34 | I improved my confident through class presentations | 2.87 | 0.93 | 2.92 | 0.27 |
| 35 | I have learned to explore ideas confidently | 2.76 | 0.80 | 2.68 | 0.47 |
| 36 | Assessment methods employed in my course content require team-building, analytical thinking and in-depth understanding. | 2.67 | 0.64 | 2.28 | 0.48 |
| | ***Intellectual Motivation*** | | | | |
| 37 | I have found the overall course that I took was motivating | 2.67 | 0.50 | 4.02 | 0.93 |
| 38 | The course has stimulated my interest in the field of study and my enthusiasm for further learning | 2.61 | 0.49 | 4.09 | 0.86 |
| | ***Personal development*** | | | | |
| 39 | The course has helped me to present myself with confidence | 2.47 | 0.64 | 3.76 | 0.54 |
| 40 | The course helped me develop my ability to work as a team member and improve my ability to cope with uncertainty | 2.42 | 0.51 | 3.83 | 0.46 |
| 41 | The course has helped my ability to work under pressure | 2.60 | 0.54 | 3.69 | 0.59 |
| 42 | The course equipped with action-planning skills and improved my leadership skills | 2.22 | 0.58 | 3.68 | 0.60 |
| 43 | The course has helped my ability to manage stress and conflict | 2.57 | 0.55 | 3.54 | 0.75 |
| 44 | My team building skills have improved | 2.32 | 0.59 | 3.21 | 0.74 |
| 45 | The course improved my skills in both spoken and written communication | 2.32 | 0.52 | 3.27 | 0.71 |
| 46 | The course improved my flexibility and creativity skills | 2.25 | 0.55 | 3.91 | 0.82 |
| 47 | The course developed my problem-solving skills | 2.28 | 0.48 | 3.80 | 0.83 |
| 48 | As a result of the course, I feel confident in tackling unfamiliar problems | 2.44 | 0.55 | 3.54 | 0.95 |
| 49 | Overall, I am satisfied with the quality of the course. | 2.16 | 0.51 | 3.83 | 0.81 |
| | ***Work Placements*** | | | | |
| 50 | I received sufficient support and advice from my HEI about the organization of my placement | 3.65 | 1.08 | 4.53 | 0.63 |
| 51 | My placements were valuable in helping my learning | 4.13 | 0.99 | 4.53 | 0.60 |
| 52 | My placement have helped to develop my hard skill related to my course | 4.07 | 0.96 | 4.49 | 0.68 |
| 53 | My placement have helped to develop my soft skill | 4.12 | 1.01 | 4.49 | 0.68 |
| 54 | My placement have helped to develop my general life skills | 4.16 | 0.91 | 4.54 | 0.67 |

relevant to the course learning objectives with a mean of 2.27 and standard deviation of 0.45. This show the current students disagree with the techniques that were used in the way of accessing their knowledge. On the other hand, the minimum mean for current students was the way HEIs encourage them in deep thinking and applying their knowledge with a mean of 2.41 and standard deviation of 0.80. This shows the current students were disagree to the way their thinking and knowledge were tested.

When the graduated students were asked on the academic support, the mean ranged from 2.39 to 3.20 and standard deviation of 0.49 to 0.88. For the current students, the mean ranged from 2.08 to 3.65 and standard deviation range from 0.37 to 0.50. The graduated students disagreed that they received sufficient advice and support about their studies from their HEIs with a mean of 2.39 and standard deviation of 0.49. This is supported by the current students where they disagreed that they received sufficient advice and support about their studies from their HEIs with a mean of 2.08 and standard deviation of 0.37. When the graduated students and current students were asked on their feedback on the organization and management, majority of the respondents choose neutral which is neither agree nor disagree. For the graduated students, the mean ranged from 2.28 to 3.26 and standard deviation range from 0.50 to 0.70. The graduated students disagreed that they were told on the subjects that they need to take and the objectives and aims of each subject at the beginning of their study with a mean of 2.28 and standard deviation of 0.58. However, the current students were neither agree not disagree to the activities of organization and management as their mean was between 3.21 to 3.30 and standard deviation was between 0.41 to 0.46. Since the information between HEIs ands students are lacking, as proposed by the third layer of the conceptual framework (KM tool), it could help the students to identify all the subjects, objectives, skill and knowledge that they will be learning through their study at the commencement of their study.

As for the course delivery, the mean range for graduated students was 2.24 to 3.39 and standard deviation range from 0.44 to 0.66. The mean range for current students was 2.21 to 3.07 and standard deviation range from 0.29 to 0.87. The graduated students disagreed that practical activities on their course have helped them to learn and improve them better. This is supported with a mean of 2.27 and standard deviation of 0.44. This could be due to limited practical activities in their courses. By developing the KM tool proposed in this study, it could highlight the amount of credit spend for theoretical and practical exercises. This could improve the practical activities in certain highlighted subjects. On the other hand, the current students disagreed that their learning has benefited them from modules that are informed by current research. This is supported with a mean of 2.21 and standard deviation of 0.41. This could be due to lack of current issues coved in their curriculum. By introducing the proposed KM tool in HEIs, it could highlight the skills and knowledge that is lacking in their current and propose action to be taken to improve and support the curriculum review process as shown in Layer 3 of the conceptual framework.

Based on the graduated students feedback on the workload of their studies, the mean range from 2.19 to 3.10 and standard deviation range from 3.28 to 3.67. Graduated students disagree that their workload actually improved their time-management as the mean was 2.19 and standard deviation was 0.73. On the other hand, the current students were neither agree not disagree with the workload as the mean range from 3.28 to 3.67 and standard deviation range from 0.58 to 0.89. This shows there is an improvement in the workload of the current curriculum compared to years back.

The graduated students mean feedback on the assessment range from 2.61 to 2.87 and standard deviation range from 0.49 to 0.93. Graduated students disagreed that all their courses tested what they have understood rather than what they memorized with mean of 2.61 and standard deviation of 0.49. On the other hand, the current students

disagreed that their assessment methods employed in their course require team-building, analytical thinking and in-depth understanding with a mean of 2.28 and standard deviation of 0.48. So, if the KM tool is introduced in HEIs, it could guide HEIs on the latest technical skills and also soft skills that are required in the job market. By identifying the lack of skills taught in the subject, the overall curriculum review process could be improved.

When the graduated students were asked on the intellectual motivation, the mean range from 2.61 to 2.67 and standard deviation range from 0.49 to 0.50. However, the current students' feedback on intellectual motivation was opposite to the graduated students' feedback as their mean range from 4.02 to 4.09 and standard deviation was from 0.86 to 0.93. This shows there is a need for continues improvement in the curriculum. The KM tool in layer three of the conceptual framework could support the HEIs during their curriculum review process by providing the necessary information which highlights the knowledge and skills required in today's job market.

When the graduated students commented on their personal development in the curriculum, the mean range from 2.16 to 2.60 and standard deviation range from 0.48 to 0.64. However based on the current students' feedback on personal development through their current curriculum, their mean range from 3.21 to 3.91 and standard deviation range from 0.46 to 0.95. This shows there is an improvement in their curriculum. However, the KM tool could support the overall curriculum review process. When the students were asked on the work placement, both the current and graduated students agreed on benefits that they gain through work placement. For the graduated students, the mean range from 3.65 to 4.16 and standard deviation range from 0.91 to 1.08. Based on the current students' feedback, the mean range from 4.49 to 4.54 and standard deviation from 0.60 to 0.68. This shows the importance of giving more credit to the work placement during their studies in the curriculum as shown in Table 5.6.

When the employers were asked on the changes that they would recommend in the education system to address the skill gap, 34.21 percent with a frequency of 52 stressed that the HEIs need to improve the quality of education in terms of its course content, study materials and quality of teachers. This is shown in Table 5.7 supported by Figure 5.1. They also recommended the HEIs to build better links with the employers so that they know the types of skills and knowledge required in the job market. This was supported 25.66 percent with a frequency of 39, with mean of 3.24 and standard deviation of 1.26.

Table 5.7: Changes in education system to address the skills gap

| | | Employer | |
|---|---|---|---|
| No. | Items | Frequency | Percent (%) |
| 1 | Teach more practical workplace skills and less theory. | 11 | 7.24 |
| 2 | Offer courses that are relevant to employer demands; not just courses that are easy to teach. | 35 | 23.03 |
| 3 | Improve the quality of education (course content, study materials, teacher quality). | 52 | 34.21 |
| 4 | Require higher standards for students to pass. | 15 | 9.87 |
| 5 | Education institutions should build better links with employers so they know what skills to teach. | 39 | 25.66 |

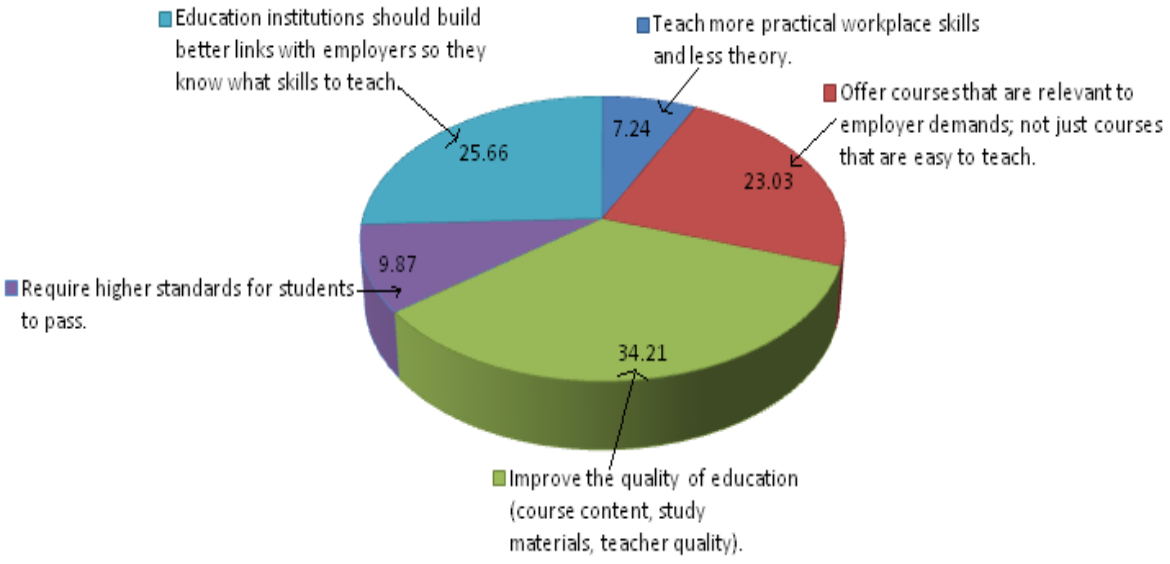


Figure 5.1: Changes in education system to address the skills gap

### 5.2.3 The higher education stakeholders' perception on the employability of ICT graduates.

Before a KM tool in HEIs to improve its curriculum review process is proposed, it is important to know the causes of unemployment among the ICT gradates in Malaysia. This section of the study discusses the causes of unemployment among ICT graduates. Questionnaires were the primary source used to answer research question for the students, HEIs and industry. It is supported with interviews as the supporting sources. It focuses the issues on unemployment among ICT graduates using Faculty of Computer Science and Information Technology (FCSIT), at a research intensive university as a case study.

The respondents (graduated students and current student) were asked on the causes of unemployment among ICT graduates focusing on the ability to analyze and solving problem, communication skills, ability to work independently, ability to develop creative and innovative enterprise solution, presentation skills, technical skills, work attitude, team leadership capabilities, decision making, time management, stress management and the confidence level as shown in Table 5.8. A rating scale ranging from not at all (not contributing to unemployment), to a small extend (contributing a small extend to unemployment), to a moderate extend (contributing a moderate extend to unemployment), to a great extend (agree that it do contribute to unemployment) and to a very great extend (fully agreeable that it contribute to unemployment). In calculating the mean and standard deviation, the following scores were used; 'not at all' =1, 'to a small extend'=2, 'to a moderate extend' =3, 'to a great extend'=4 and 'o a very great extend'=5.

Table 5.8: student view on competencies

| No | Item | Graduated Students | | Current Students | |
|---|---|---|---|---|---|
| | | Mean* | Standard Deviation | Mean* | Standard Deviation |
| 1 | Ability to analyze and solve problems. | 3.41 | 0.87 | 3.43 | 0.73 |
| 2 | Good communication skills (written and spoken) | 2.96 | 0.96 | 3.56 | 0.96 |
| 3 | The ability to work independently | 2.74 | 0.67 | 3.36 | 0.61 |
| 4 | The ability to develop creative and innovative enterprise solution | 2.61 | 0.78 | 3.53 | 0.85 |
| 5 | Good presentation skills | 2.88 | 0.96 | 3.25 | 0.70 |
| 6 | Technical skills | 3.35 | 0.73 | 3.98 | 0.96 |
| 7 | Work attitude | 3.14 | 0.79 | 3.43 | 0.74 |
| 8 | Team leadership capabilities | 2.84 | 0.85 | 3.83 | 0.85 |
| 9 | Decision making | 2.90 | 0.70 | 3.24 | 0.55 |
| 10 | Time management | 2.99 | 0.76 | 3.87 | 0.63 |
| 11 | Stress management | 2.91 | 0.74 | 3.72 | 0.77 |
| 12 | Confidence | 2.78 | 0.73 | 3.64 | 0.86 |

The responders (current students and graduated students) were asked on the causes of unemployment among ICT. As a whole the graduated students argue that the moderate extend that cause unemployment among fresh graduates are due to their work attitude (mean of 3.14 and standard deviation of 0.79) and technical skills with a mean of 3.35and standard deviation of 0.73. On the other hand, the current students argue that the moderate extend that cause unemployment among fresh graduates are due to their time management skill which contribute a mean of 3.87 and standard deviation of 0.63 and also technical skills with a mean of 3.98 and standard deviation of 0.96. These shows both the groups of students are firmed that technical skills provide moderate extend which cause unemployment. So, in designing and developing the KM tool, the technical skill analyses need to take extra care.

Based on the employers' feedback, they rated the ability to analyze and solve the problems to a moderate extend with a mean of 3.47 and standard deviation of 0.73 as shown in Table 5.9. This is supported by the current students with a mean of 4.06 and standard deviation of 0.72. This shows that the HEIs is focusing more on the ability to analyze and solve problem in their curriculum compared to the requirements of the

HEIs. Besides that the employers also stressed that the team leadership capabilities contribute moderate extend to the cause of unemployment among the graduates. This is supported with a mean of 3.36 and standard deviation of 0.92. On the other hand, the HEIs argued that good presentation skill contribute to a great extend to the cause of unemployment among the graduates with a mean of 4.13 and standard deviation of 0.71. In addition to that, the HEIs also argue that decision making skill contribute to a great extend for unemployment with a mean of 4.16 and standard deviation of 0.77. However, the based on the employers' feedback, decision making skill only contribute a mean of 2.97 and standard deviation of 0.88, which only contribute to a small extent for unemployment. Based on the findings, we can conclude that the employers and HEIs perceptive on unemployment is different. So, there is a need to propose a KM tool which could guide HEIs on the skills and knowledge required by the employers for curriculum review process.

Table 5.9: HEI and Employer view on 12 competencies

| | | Employer | | HEI | |
|---|---|---|---|---|---|
| No | Item | Mean* | Standard Deviation | Mean* | Standard Deviation |
| 1 | Ability to analyze and solve problems. | 3.47 | 2.73 | 4.06 | 0.72 |
| 2 | Good communication skills (written and spoken) | 3.09 | 0.61 | 3.81 | 0.82 |
| 3 | The ability to work independently | 3.26 | 0.81 | 4.03 | 0.65 |
| 4 | The ability to develop creative and innovative enterprise solution | 3.32 | 0.69 | 3.97 | 0.59 |
| 5 | Good presentation skills | 3.16 | 0.53 | 4.13 | 0.71 |
| 6 | Technical skills | 3.17 | 0.51 | 3.97 | 0.90 |
| 7 | Work attidute | 3.07 | 0.78 | 3.91 | 0.69 |
| 8 | Team leadership capabilities | 3.36 | 0.92 | 3.94 | 0.91 |
| 9 | Decision making | 2.97 | 0.88 | 4.16 | 0.77 |
| 10 | Time management | 3.30 | 0.58 | 4.06 | 0.67 |
| 11 | Stress management | 2.61 | 0.66 | 3.78 | 0.83 |
| 12 | Confidence | 3.14 | 0.77 | 3.94 | 0.95 |

Among the graduated students' respondents, 70.1 % (f=103) were working. Among the working respondents, 18.4% (f=12) agreed that their university educations are directly relevant to their present job. 8.2% (f=12) were very satisfied with the present job. Only 25.9% (f=38) were very satisfied with their career satisfaction, as shown in Figure 5.2.

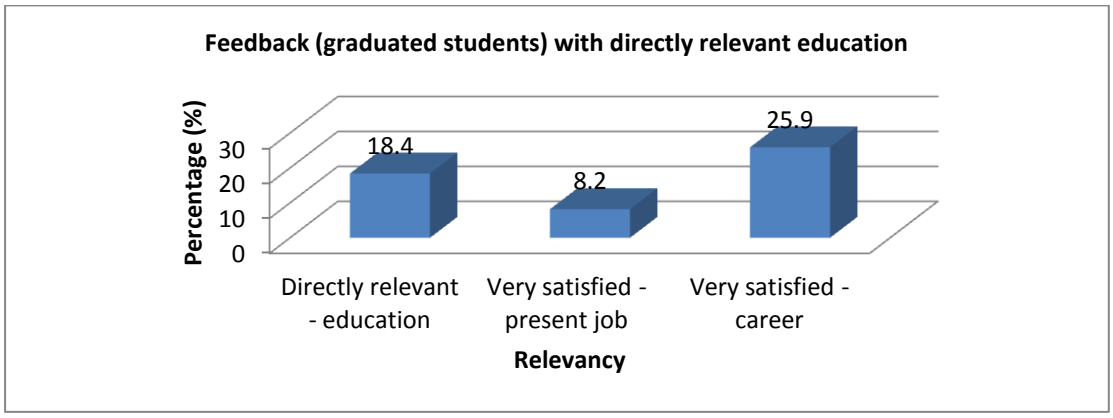


Figure 5.2: Feedback (graduated students) with directly relevant education

Among the graduated respondents, majority of the respondents agreed that their university educations are only some what relevant to their present job. This is supported by 86.4% (f=127) of them moderately satisfied with their present job and 71.4% (f=105) were moderately satisfied with their career, as shown in Figure 5.3.

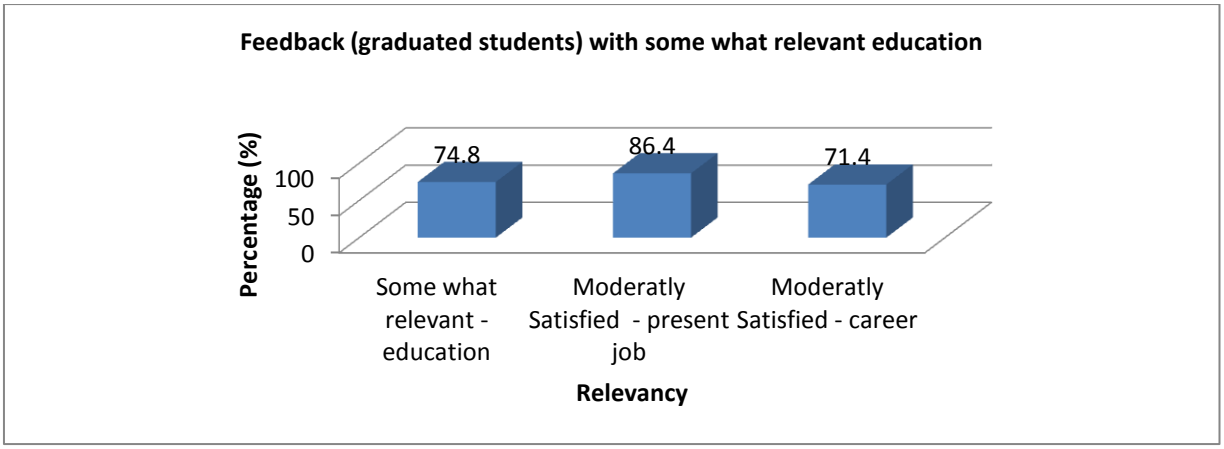


Figure 5.3: Feedback (graduated students) with some what relevant education

Least students agreed that their universities education is not relevant to their present job. Among them, only 5.4% (f=8) were not satisfied with their present job and only 2.7% (f=4) are not satisfied with their career, as shown in figure 5.4. This shows the university still does not cater well the students' satisfaction on the university education. If the students are not satisfied with their present job and not satisfied with their career, the changes for them to loss their job is high which drop them into unemployment.

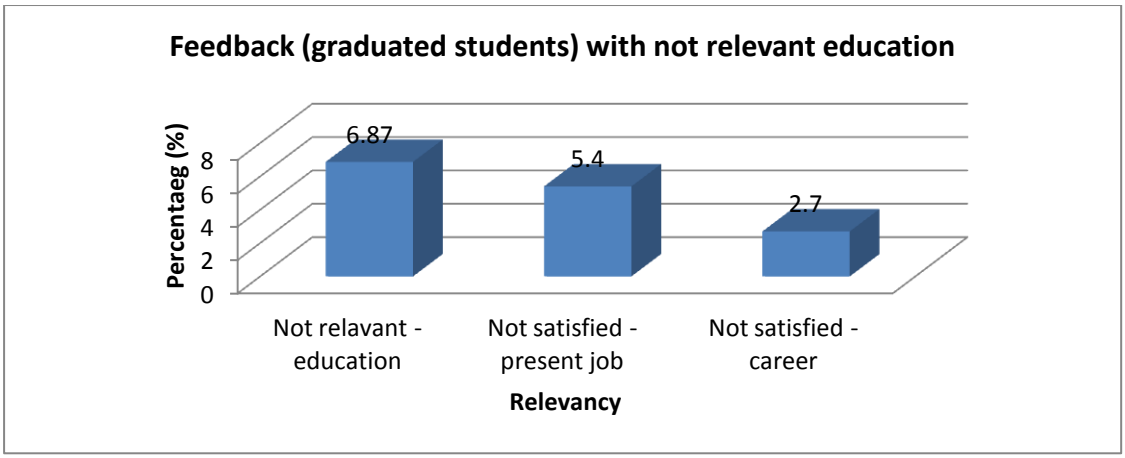


Figure 5.4: Feedback (graduated students) with not relevant education

The respondents (current students and graduated students) were asked if they go through the newspaper or other sources to find out the latest technical or non-technical requirements related to their career in the job market as shown in Figure 5.5. Based on that, 78.2% (f=115) of the graduated students agreed that they do go through the newspaper or other sources to find out the latest technical or non-technical requirements related to their career in the job market. However, 88.2% (f=217) of the current students do not go through the newspaper. This shows the current students to do not take extra initiative to know more about their course. As the current students do not take initiative to know the requirements in the job market, the current students will not be able to get them mentally and physically prepared for the job market. With the proposed KM tool in the HEIs, it could guide the current students on the latest competencies requirements in

the job market. By going through the KM tool available in their faculty, the students will be aware on the skills and knowledge required by the employers and get them prepared for the job market.

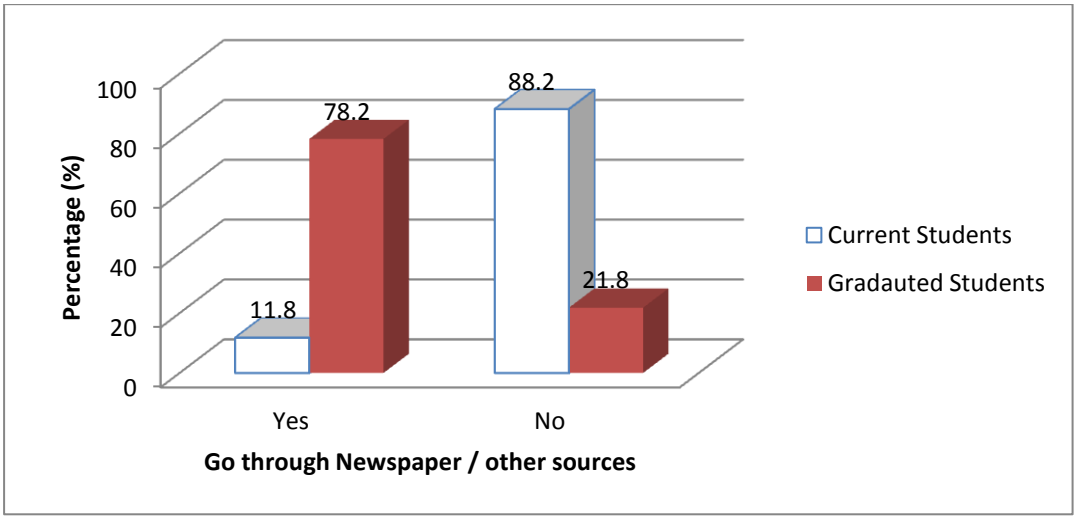


Figure 5.5: Going through newspapers or other sources

The students were asked to rank the importance of soft skills in an ICT student career. A rating scale ranging from not at all important (lesser priority given), reasonably important (priority given) and very important (very high priority given) were used. In calculating the mean and standard deviation, the following scores were used; 'not at all important'=1, 'reasonably important'=2, 'very important' =3. The mean for current students were 2.19 which is reasonably important and standard deviation = 0.52. On the other hand, the mean for graduated students were 2.67 which is close to very important, with a standard deviation of 0.47. The students were further asked to rank their soft skills abilities. In calculating the mean and standard deviation, the following scores were used; 'not at all good'=1, 'reasonably good'=2, 'very good =3. The mean for current students were 1.89 which is not at all good and a standard deviation of 0.47. On the other hand, the mean for graduated students were 2.13 which was reasonably good with standard deviation of 0.46. Although the students are aware the importance of soft skills

but their soft skills of the current students are still not satisfactory. By proposing the KM tool in HEIs, it could give a guideline on the importance of soft skills to the student.

The current students and graduated students were asked on the causes which contribute to unemployment among fresh graduates in Malaysia. Among the options that were given to them are factors such as lack of experience, capacity to communicate in English, lack of ICT proficiency and lack of interpersonal skills. In calculating the mean and standard deviation, the following scores were used; 'most contributing factors'=1 to 'least contributing factors'=4. Based on the current students' feedback, majority of the respondents strongly agreed that, lack of experience is the most contributing factor with a mean of 1.22 and standard deviation of 0.49. The second contributing factors that cause unemployment are the capacity to communicate well in English with a mean of 1.83 and standard deviation of 0.44.

This is followed by lack of ICT proficiency with a mean of 3.08 and standard deviation of 0.45 and finally the least respondents feel that lack of interpersonal skills with a mean of 3.85 and standard deviation of 0.40 contribute to unemployment. On the other hand, majority of the graduated students feel that lack of ICT proficiency with a mean of 1.46 and standard deviation of 0.88 contribute the most to contributing factors to unemployment. This is followed by capacity to communicate well in English with a mean of 2.07 and standard deviation of 0.43, lack of interpersonal skills with a mean of 3.17 and standard deviation of 0.52 and lack of experience was chosen as the least contributing factor for unemployment with a mean of 3.31 and standard deviation of 0.78. This shows the currents students' expectation is reverse to the graduated students' perspective on the unemployment issues. So, HEIs need to provide the right direction to their students so that they are aware on the skills and knowledge that they need to improve to satisfy their future employers. This can be done by the proposed KM tool which highlights the skills and knowledge required by the employers. In addition to that,

the graduated students were asked if the students should be given more chance to work during their studies. In calculating the mean and standard deviation, the following scores were used; ‘yes’=1 and ‘no’=2. The mean for the graduated students was 1.29 and standard deviation was 0.46. These shows that majority of the students agreed that more chance should be given for them to work during their studies. They also claimed that by working, they could improve their soft skills. This is supported by the employers when they were asked whether work placement is required during the students’ study. In calculating the mean and standard deviation, the following scores were used; ‘yes’=1 and ‘no’=2. Based on their feedback, the mean was 1.03 and standard deviation was 0.16. They supported with the fact that they students improve their soft skills, hard skills or both skills after their internship programme with a mean of 1.13 and standard deviation of 0.33.

Besides that, both current students and graduated students were also asked whether they received useful information from their HEIs before they enroll themselves for a course. In calculating the mean and standard deviation, the following scores were used; ‘not at all’=1 ‘reasonably’= 2 and ‘good information’=3. The mean for the graduated students was 1.31 with a standard deviation of 0.59. This shows the graduated students do not received any useful information from their HEIs before they enroll into a course. This is supported by the current students’ feedback with a mean of 1.15 and standard deviation of 0.37. This shows both the current students and graduated students do not get any useful information from their HEIs before they enroll into a course. This could be due to the lack of information that HEIs have on the futures of the courses that they are offering. By proposing the KM tool, it could highlight the courses that are in demand in the job market, the skills and knowledge required in the job market and other related information that could be useful and helpful for the students to make decision on their courses and career.

The employers were asked if they consider employing fresh graduates. In calculating the mean and standard deviation, the following scores were used; ‘yes’=1 and ‘no’=2. The mean for the employers was 1.1 and standard deviation was 0.31. This shows that, most of the employers are ready to consider employing fresh graduates in their organization.

The employers were also asked whether their graduates that they employ meet the employer’s demand for skills in the workplace. In calculating the mean and standard deviation, the three options with the following scores were used; ‘graduates are educated with all or most of the right skills for the job market’=1, ‘graduates are educated with some of the skills for the job market, but not all of the skills’=2 and finally ‘graduates are not education with the right skills for the job market’=3. The mean gathered from this issue was 2.11 with a standard deviation of 0.55. This shows that most if the employers were stressing that the graduates are educated with some of the skills for the job market, but not all of the skills. This shows there is a skill gap exists between the HEIs and the employers. This is supported by the employers when they were asked if there is skill gaps exist between the skills required by employers and skills offered by graduates. In calculating the mean and standard deviation, the following scores were used; ‘yes’=1 and ‘no’=2. The mean for the graduated students was 1.00 with a standard deviation of 0.00. This shows that all the respondents agreed that there is an existence of skill gap between the skills required by the employers and skills offered by the graduates.

Apart from that, the employers were also asked for the most three important skills or qualities they are looking for when hiring a fresh graduate. In calculating the mean and standard deviation, the options with the following scores were used; ‘ability to analyze and solve problem’=1, ‘good communication skills’=2, ‘the ability to work independently’=3, ‘the ability to develop creative and innovative enterprise solution’=4, ‘good presentation skills’=5, ‘technical skills’=6, ‘work attitude’=7, ‘education level’=8,

‘experience’=9, ‘team leadership capabilities’=10 and ‘others’=11. Based on the findings, the mean was 3.48 with a standard deviation of 2.46. This shows that most of the employers were claiming that good communication skills, the ability to work independently and the ability to develop creative and innovative enterprise solution are the most important skills or qualities that the employers are seeking from the fresh graduates in their workplace.

The employers were further asked on the area that their company spend large amount of time and money to train the fresh graduates. In calculating the mean and standard deviation, the options with the following scores were used; ‘administration’=1, ‘communication skills’=2, ‘compliance with relevant laws’=3, ‘computers or information technology’=4, ‘marketing, sales and customer service’=5, ‘decision making or problem solving skills’=6, ‘foreign language’=7, ‘leadership skill’=8, ‘team work skill’=9, ‘technical skills’=10, ‘time management’=11, ‘stress management’=12 and ‘others’=13. Based on the findings, the mean was 6.23 with standard deviation of 3.85. This shows that, most of the employers are spending a large amount of time and money on decision making or problem solving skills training.

During the questionnaire session, the employers were asked to give advice to the fresh graduates to help them find a good job. A number of options were given in the questionnaire. In calculating the mean and standard deviation, the options with the following scores were used; ‘get good marks in your studies’=1, ‘complete more than one degree’=2, ‘try to study in overseas’=3, ‘choose course that are demanded by the employers, not just the easy or popular courses’=4, ‘learn practical skills by volunteering with youth or other organization’=5, ‘develop the right attitude’=6 and ‘others’=7. Based on the findings, the mean was 4.14 and standard deviation was 1.04. That shows that, most of the employers are advising the fresh graduates to concentrate in choosing the course that are demanded by the employers, not just the easy or popular courses.

Besides that, the employers were also asked on the changes to be done on the in the education system to address the skills gap. In calculating the mean and standard deviation, the options with the following scores were used; 'teach more practical workplace skills and less theory'=1, 'offer courses that are relevant to employer demands, not just courses that are easy to teach'=2, 'improve the quality of education'=3, 'require higher standards for students to pass'=4, 'education institutions should build better links with employers so they know what skills to teach'=5 and 'others'=6. Based on the findings, the mean was 3.24 with standard deviation of 1.26. This shows that most of the employers feel that the HEIs need to improve the quality of education.

The employers were also asked on the laws and policies that the government could develop to address the skills gap. In calculating the mean and standard deviation, the options with the following scores were used; 'increase spending on universities and institutions'=1, 'improve the education standards through stronger accreditation of universities and institutions'=2, 'facilitate better communications between government policy maker, universities and employers'=3 and 'others'=4. Based on the findings, the mean was 2.55 and standard deviation was 0.7. This shows that the employers should improve the education standards through stronger accreditation of universities and institutions in order to improve the employability rate among the graduates.

The employers were given five factors and requested them to rank them when they shortlist the candidate for a vacant position. The five factors consist of university rating, soft skills, CGPA, technical knowledge and level of education. In calculating the mean and standard deviation, the options with the following scores were used; 'university rating'=1, 'soft skills'=2, 'CGPA'=3, 'technical knowledge'=4 and 'level of education'=5.

The results shows that, the mean for university rating was 4.55 with 0.74 standard deviation, mean of 2.99 and standard deviation of 0.68 for soft skills, mean of 1.89 and standard deviation for CGPA, mean of 4.18 and standard deviation of 0.47 for technical knowledge and mean of 1.12 and standard deviation of 0.34 for level of education. So, this shows that, the highest factor that contribute for short listing a candidate if university rating. This shows the importance of keeping proving the right curriculum to their students to attract the employer's demand on their university. The least contributing factor was level of education with a mean of 1.12. This shows that, having higher degree it self does not secure a place in the job market. The most important factors are having the right knowledge as requested by the employers. This could be achieved by having a proper communication link between the HEIs and employers. This is supported by the employer by stressing that they are willing to cooperate with the universities in preparing or "coaching" the students and graduates to the labour market. In calculating the mean and standard deviation, the following scores were used; 'yes'=1 and 'no'=2. Based on the finding, the mean was 1.24 with a standard deviation of 0.43. This shows the willingness of the employers to cooperate with the university.

### 5.2.4 Capture the requirements of knowledge management system that can support the employability of ICT graduates and the improvement of curriculum review process.

As discussed in Section 5.22, once the participants (Layer 1), information (Layer 2) and technology (Layer 3) are clearly defined, the next stage in the conceptual framework based on WST as discussed in Chapter 2 is the process and activities (layer 4). This layer includes everything that happens within the WST. Activities within each step include

combinations of information processing, communication, decision making, thinking, and physical actions. Here, there will be a focus on the information processing that occur between HEIs, industry and students; sense making and thinking that involve in decision making and the physical actions that taken place such as employers inviting for current students or graduated students for interviews. In this study, it is important to know how the KMS will support the employability of ICT graduates and the improvement in the curriculum review process.

Once the business processes and activities are identified in the study, the next stage is to understand the type of product or services (Layer 5) it supposes to supply. In this study, the main concern is how KM tool going to support HEIs in curriculum review process. This could be achieved by developing a stronger relationship between industry, HEIs and students. This could help HEIs to improve the curriculum review process and support the employability. Once the product and services are discussed in this section, then the study needs to identify the customers (Layer 6) for this study. This will be discussed in objective 4. This is followed by Layer 7 (outcomes) and layer 8 (ultimate goal) that will be discussed in research objective 4. The respondents (current students and graduated students) were asked on the importance of KM practices within their faculty. In calculating the mean and standard deviation, the options with the following scores were used; 'strongly disagree'=1, 'disagree'=2, 'neither agree not disagree'=3, 'agree'=4 and 'strongly agree'=5. Based on the finding it showed that, the graduated students agree (mean of 3.99 and standard deviation of 1.05) that KM could improve their organization mission. This is supported by current students with a mean of 4.57 and standard deviation of 0.65 as shown in Table 5.10. This is further supported by the employers and HEIs as shown in Table 5.11. The mean for employer was 4.63 with a standard deviation of 0.70 and the mean for HEIs is 4.46 with a standard deviation of 0.84.

Table 5.10: Importance of KM practices within the faculty: Current Students and Graduated Students' view

| No | Item | Graduated Students | | Current Students | |
|---|---|---|---|---|---|
| | | Mean* | Standard Deviation | Mean* | Standard Deviation |
| 1 | Improve their organizations' mission | 3.99 | 1.05 | 4.57 | 0.65 |
| 2 | Encourage a knowledge-creation process and utilizing that knowledge for Curriculum improvement. | 4.12 | 1.02 | 4.54 | 0.66 |
| 3 | Overhaul our educational curriculum towards a more human and humane oriented strategies | 4.04 | 0.98 | 4.43 | 0.80 |
| 4 | To adjust them and develop strategies to respond rapidly to the changes in technologies and increasing demands of stakeholders | 3.60 | 1.00 | 4.57 | 0.64 |
| 5 | Improved quality of curriculum and programmes and leveraging best practices and monitoring outcomes | 3.90 | 1.04 | 4.52 | 0.67 |
| 6 | Improved speed of curriculum revision and Updating | 4.22 | 0.87 | 4.49 | 0.71 |
| 7 | Improved administrative services related curriculum improvement | 4.03 | 1.00 | 4.50 | 0.72 |
| 8 | Interdisciplinary curriculum design and development facilitated by moving across boundaries. | 4.23 | 0.96 | 4.58 | 0.59 |
| 9 | Meeting the challenges of competition with other universities | 4.13 | 0.79 | 4.53 | 0.64 |
| 10 | Help in reviewing, revising, and effecting stronger curriculum development processes, interdepartmental assessments, department portfolios or program reviews. | 4.04 | 1.05 | 4.46 | 0.70 |
| 11 | Saving time and effort to get knowledge | 4.05 | 0.95 | 4.46 | 0.71 |
| 12 | Improve decision making on curriculum | 4.32 | 0.99 | 4.58 | 0.71 |
| 13 | Improve the service quality | 4.05 | 1.07 | 4.58 | 0.66 |
| 14 | Satisfy their stakeholders (students, parents, accreditation body, MOHE and etc.) | 4.15 | 0.81 | 4.61 | 0.54 |
| 15 | Increase the employability among ICT graduates | 3.90 | 0.83 | 4.47 | 0.71 |
| 16 | Obtain information more quickly and accurately, be better informed, and make more timely decisions | 4.11 | 0.79 | 4.46 | 0.69 |

Table 5.11: Importance of KM practices within the faculty: Employer and HEIs' view

| No | Item | Employer | | HEI | |
|---|---|---|---|---|---|
| | | Mean* | Standard Deviation | Mean* | Standard Deviation |
| 1 | Improve their organizations' mission | 4.63 | 0.70 | 4.46 | 0.84 |
| 2 | Encourage a knowledge-creation process and utilizing that knowledge for Curriculum improvement. | 4.81 | 0.65 | 4.59 | 0.66 |
| 3 | Overhaul our educational curriculum towards a more human and humane oriented strategies | 4.45 | 0.59 | 4.62 | 0.91 |
| 4 | To adjust them and develop strategies to respond rapidly to the changes in technologies and increasing demands of stakeholders | 4.82 | 0.55 | 4.35 | 0.71 |
| 5 | Improved quality of curriculum and programmes and leveraging best practices and monitoring outcomes | 4.69 | 0.69 | 4.61 | 0.59 |
| 6 | Improved speed of curriculum revision and Updating | 4.66 | 0.72 | 4.53 | 0.56 |
| 7 | Improved administrative services related curriculum improvement | 3.72 | 0.58 | 4.58 | 0.72 |
| 8 | Interdisciplinary curriculum design and development facilitated by moving across boundaries. | 4.41 | 0.63 | 4.47 | 0.43 |
| 9 | Meeting the challenges of competition with other universities | 4.17 | 0.59 | 4.29 | 0.68 |
| 10 | Help in reviewing, revising, and effecting stronger curriculum development processes, interdepartmental assessments, department portfolios or program reviews. | 4.62 | 0.61 | 4.53 | 0.94 |
| 11 | Saving time and effort to get knowledge | 4.78 | 0.74 | 4.46 | 0.67 |
| 12 | Improve decision making on curriculum | 4.41 | 0.68 | 4.51 | 0.52 |
| 13 | Improve the service quality | 4.59 | 0.39 | 4.27 | 0.93 |
| 14 | Satisfy their stakeholders (students, parents, accreditation body, MOHE and etc.) | 4.53 | 0.86 | 4.59 | 0.47 |
| 15 | Increase the employability among ICT graduates | 4.56 | 0.66 | 4.67 | 0.73 |
| 16 | Obtain information more quickly and accurately, be better informed, and make more timely decisions | 4.62 | 0.62 | 4.35 | 0.92 |

Besides that, the graduated students also stressed that KM could encourage a knowledge-creation process and utilize that knowledge for curriculum improvement with a mean of 4.12 and standard deviation of 1.02. This is also supported by the current students with a mean of 4.54 and standard deviation of 0.66, employer with a mean of 4.81 and standard deviation of 0.65 and HEIs with a mean of 4.59 and standard deviation of 0.66. In addition to that, the graduated students also argued that KM could overhaul their educational curriculum towards a more human and humane oriented strategies. This is supported by mean of 4.04 and standard deviation of 0.98. This is supported by the current student with a mean of 4.43 and standard deviation of 0.80, employer with a mean of 4.45 and standard deviation of 0.59 and HEI with a mean of 4.62 and standard deviation of 0.91.

The graduated students neither agrees not disagree with that statement that KM could adjust them and develop strategies to respond rapidly to the changes in technologies and increasing demands of stakeholders with a mean of 3.60 and standard deviation of 1.00. In contrast, the current student agree that KM could adjust them and develop strategies to respond rapidly to the changes in technologies and increasing demands of stakeholders with a mean of 4.57 and standard deviation of 0.64, the employer with a mean of 4.82 and standard deviation of 0.55 and HEIs with a mean of 4.35 and standard deviation of 0.71.

The graduated students neither agrees not disagree with that statement that KM could improve the quality of curriculum and programmes and leveraging best practices and monitoring outcomes with a mean of 3.90 and standard deviation of 1.04. On the other hand, the current students agree that KM could improve the quality of curriculum and programmes and leveraging best practices and monitoring outcomes with a mean of 4.52 and standard deviation of 0.67, the employer with a mean of 4.69 and standard deviation of 0.69 and HEIs with a mean of 4.61 and standard deviation of 0.59.

Both the groups of respondents agreed that KM could improve the speed of curriculum revision and updating. This is supported by graduated students with a mean of 4.22 and standard deviation of 0.87 and current students with a mean of 4.49 and standard deviation of 0.71, the employer with a mean of 4.66 and standard deviation of 0.72 and HEIs with a mean of 4.53 and standard deviation of 0.56. Apart form that the graduated students also agreed that KM could improve the administrative services related curriculum improvement with a mean of 4.03 and standard deviation of 1.00. This is supported by the current students with a mean of 4.50 and standard deviation of 0.72, the employer with a mean of 3.72 and standard deviation of 0.58 and HEIs with a mean of 4.58 and standard deviation of 0.72. Since both the respondents agreed that KM could improve the curriculum review process, they argued that it could support HEIs to meet the challenges of competition with other universities. This was supported by graduated students with a mean of 4.13 and standard deviation of 0.79 and current students with a mean of 4.53 and standard deviation of 0.64, the employer with a mean of 4.17 and standard deviation of 0.59 and HEIs with a mean of 4.29 and standard deviation of 0.68. They also added that, KM could help the HEIs in reviewing, revising, and effecting stronger curriculum development processes, interdepartmental assessments, department portfolios or program reviews. This was supported by graduated students with a mean of 4.04 and standard deviation of 1.05 and current students with a mean of 4.46 and standard deviation of 0.70, the employer with a mean of 4.62 and standard deviation of 0.61 and HEIs with a mean of 4.53 and standard deviation of 0.94. They also argued that KM could help HEIs to obtain information more quickly and accurately, be better informed, and make more timely decisions. This is supported by the graduated students with a mean of 4.11 and standard deviation of 0.79 and current students with a mean of 4.46 and standard deviation of 0.69, the employer

with a mean of 4.62 and standard deviation of 0.62 and HEIs with a mean of 4.35 and standard deviation of 0.92.

By proposing KM in HEIs, the graduated students also agreed (mean of 4.05 and standard deviation of 0.95) that it could save the HEIs time and effort to get knowledge on the skills and knowledge that is required in the job market. In the proposed KM tool, it could show the latest skills and knowledge required in the job market and it could be very useful during curriculum review process. This is supported by the current students with a mean of 4.46 and standard deviation of 0.70, the employer with a mean of 4.78 and standard deviation of 0.74 and HEIs with a mean of 4.46 and standard deviation of 0.67. Besides that, the graduated students also agreed that, with the help in reviewing, revising, and effecting stronger curriculum development processes, it could improve the decision making on curriculum with a mean of 4.32 and standard deviation of 0.99. This is supported by the current students with a mean of 4.58 and standard deviation of 0.71, the employer with a mean of 4.41 and standard deviation of 0.68 and HEIs with a mean of 4.51 and standard deviation of 0.52. All the respondents also agreed that this will help the HEIs to improve their service quality. This is supported by the graduated students with a mean of 4.05 and standard deviation of 1.07 and current students with a mean of 4.58 and standard deviation of 0.66, the employer with a mean of 4.59 and standard deviation of 0.39 and HEIs with a mean of 4.27 and standard deviation of 0.93. By improving the service quality of the HEIs, it will satisfy their stakeholders. This is supported by the graduated students with a mean of 4.15 and standard deviation of 0.81 and current students with a mean of 4.61 and standard deviation of 0.54, the employer with a mean of 4.53 and standard deviation of 0.86 and HEIs with a mean of 4.59 and standard deviation of 0.47.

The graduated students also agreed that KM could support the interdisciplinary curriculum design and development facilitated by moving across boundaries with a

mean of 4.23 and standard deviation of 0.96. This is supported by the current students with a mean of 4.58 and standard deviation of 0.59, the employer with a mean of 4.41 and standard deviation of 0.63 and HEIs with a mean of 4.47 and standard deviation of 0.43. Based on the finding on the importance of KM in their faculty the graduated students also supported with the fact that KM could increase the employability among ICT graduates with a mean of 3.90 and standard deviation of 0.83 and current students with a mean of 4.47 and standard deviation of 0.71, the employer with a mean of 4.56 and standard deviation of 0.66 and HEIs with a mean of 4.67 and standard deviation of 0.73. There is a gap between the graduated students and the current students view may be due to the changes in the current HEIs environment.

In order to know the effectiveness of KM tool for the students, both the current students and graduated students were asked the common method that they use to communicate or share their knowledge with others in their faculty or campus. 6 options were given to them. In calculating the mean and standard deviation, the options with the following scores were used; 'e-mail'=1, 'face book'=2, 'face to face'=3, 'messengers'=4, 'telephone'=5 and 'others'=6. Based on the finding, it is shown that the mean for graduated students is 2.44 and standard deviation is 1.38. This shows that most of the students prefer to use face book as a common method to communicate or share their knowledge. This shows that the KM tool that is proposed to implement in the HEIs will get a good support from the students.

The employers were asked if it is important for HEIs to have communication link with the employers to keep their curriculum up to date. In calculating the mean and standard deviation, the options with the following scores were used; 'yes'=1 and 'no'=2. Based on the findings, the mean was 1.07 and standard deviation was 0.26. This is supported with the fact that the employers are willing to give feedback to HEIs on their market requirements. In calculating the mean and standard deviation, the options with

the following scores were used; ‘yes’=1 and ‘no’=2. Based on the feedback, the mean was 1.05 with a standard deviation of 0.22. This shows that majority of the employers are willing to give feedback to HEIs on their market requirements. This is very supportive to the propose idea of introducing KM tool in HEIs to support the curriculum review process. During the questionnaires sessions, the current students were asked the primary objective(s) or benefit(s) that you would obtain from using KMS. In calculating the mean and standard deviation, the options with the following scores were used; ‘give an idea on the course to enroll by looking at the course details (skills and knowledge learned)’=1, ‘improve the communication better between HEIs, employers and students’=2, and ‘view vacancy and apply job vacancy online’=3. Based on the results, it should that, the mean was 1.81 and standard deviation was 0.54. On the other hand, based on the graduated students’ feedback, they argue that the mean was 1.19 with a standard deviation of 0.47. This shows that most of the students were interested to know more idea on the course to enroll by looking at their course details. The HEIs’ mean was 2.84 supported with 0.45 of standard deviation and employer’s mean of 2.83 with a standard deviation of 0.33. By looking at the mean and standard deviation, the mean was also very close to the second option which shows that KM is important to improve the communication between HEIs, employers and students.

The respondents were also asked whether the respondents’ agreed that the students should be given the chance to see the employers’ comments on the skills and knowledge required in the job market. In calculating the mean and standard deviation, the options with the following scores were used; ‘yes’=1, ‘no’=0. This was supported by the current students with a mean of 1.05 and standard deviation of 0.22. The graduated students’ feedback, they argue that the mean was 1.04 with a standard deviation of 0.19. This clearly shows that the students agreed that students should be given the chance to see the employers’ comments on the skills and knowledge required in the job market.

Both the groups of students also argued that the skills and knowledge gathered from the employers need to be compared with the current curriculum of the HEIs. This is supported with mean of 1.10 and 0.28 of standard deviation. This is supported with the graduated students with a mean of 1.02 and standard deviation of 0.14. This is further supported by the employer that, KMS is important to be used to compare the skills and knowledge taught in the HEIs and demanded by the employers. This is supported with a mean of 1.09 and standard deviation of 0.29 for the HEIs, it was supported with a mean of 1.06 and standard deviation of 0.25. This is supported by the HEIs that, the HEIs need to view all the skills and knowledge learned form a course for the entire curriculum covered in the faculty through KMS. This was supported with a mean of 1.09 and standard deviation of 0.29.

The students were also asked whether KMS could help HEIs to support the curriculum review process if the KMS provide them the skills and knowledge required by the employers. Based on the analysis, it shows that for the mean for current students was 1.07 supported with standard deviation of 0.25. On the other hand, the mean for graduated students was 1.03 with standard deviation of 0.16. The students were asked if they are interested to apply for job vacancies through the proposed KMS in their faculty. Based on the current student's feedback, it shows the mean of 1.06 with standard deviation of 0.23 for current students and 1.05 for graduated students mean and standard deviation of 0.22. This is further agreeable and pleased by the employer that they are ready to use the KMS to upload job vacancies with all the skills and knowledge required with a mean of 1.07 and standard deviation of 0.30. The employers are also pleased if the proposed KMS given them the option to view the candidate's application and invite the successful candidate for an interview. This is supported by 1.07 of mean and 0.25 of standard deviation.

Most of the respondents also supported that the results of knowledge and skills gathered from the employers through KMS and the comparison should be done with the current curriculum of the HEIs and it should be shown in the statistics form. This is supported with a mean of 1.02 and standard deviation for currents students and with a mean of 1.12 and standard deviation of 0.33 for graduated students. This is further supported by the HEIs and employers that there a need to show the statistics that summarize the skills and knowledge taught in the HEIs and demanded by the employers. This is supported with a mean of 1.06 and standard deviation of 0.25 for HEI and for employers, the mean was 1.03 with 0.16 for standard deviation. The HEIs and employers also agreed that KMS should connect the subject that has issues in the skills and knowledge covered with the proposed action. This is supported by of mean of 1.09 and of standard deviation of 0.29 for HEIs and mean of 1.03 and 0.19 of standard deviation for employers.

Both the groups of the respondents also agreed that there should be a graph in the KMS to display the affected skills. This is supported by the HEIs with a mean of 1.25 and standard deviation of 0.44 and 1.03 of mean for employers with 0.16 of standard deviation. The employer and HEIs also were asked on the number of skills should be shown by the KMS in the graph which shows the affected skills requested by the employers. In calculating the mean and standard deviation, the options with the following scores were used; ‘1 to 5 skills’=1, ‘6 to 10 skills’=2 and ’11 to 20 skills’=3. Based on the analysis, it is shown a mean of 2.10 and standard deviation of 0.40 for the employer. This is further supported by the HEIs with a mean of 2.13 and standard deviation of 0.42. This shows both employers and HEIs argued that there should be only 6 to 10 skills shown in the graph.

The employers and HEIs were asked on how they could use KMS to display the action to be taken based on the gap between the skills and knowledge supplied in the

HEIs and demanded by the employers in the job market. In calculating the mean and standard deviation, the options with the following scores were used; 'just show an alert on the subject'=1, 'based on the percentage difference, propose some effective action'=2 and 'highlight the whole course. Then, the HEIs need to search for the subject manually and find for solution'=3. Based on the analysis, the mean for HEIs was 2.00 and standard deviation of 0.36. This is supported by the employer with a mean of 1.99 and standard deviation of 0.26.

## 5.3 Interview Findings

This section presents the findings from the analysis of the data obtained from interviewing 31 graduated students, 48 current students, 24 employers, 15 academic staff and 9 non-academic staff (see Appendix H). These respondents who were earlier sampled in the initial survey expressed their willingness to participate in the interview. In the interviewing, the data was organized based on the respondent's code. There are a number of abbreviations used for interviewing as listed below:

(i) CSGn: Current Student (Group)
(ii) CSIn: Current Student (Individual)
(iii) GSn: Graduated Student
(iv) GSGn: Graduated Student (Group)
(v) ASn: Academic Staff
(vi) NASn: Non-Academic Staff
(vii) En: Employer
(viii) EGn: Employer (Group)
(ix) n : Represent the sequence number

Their demographic information about the graduated students and current students are presented in Table 5.12 and 5.13 respectively. The interviews with the current students

and graduated students were carried out using four (4) open-ended questions as posed below:

(i) What are the importance of KM practices in Faculty and collaboration with employers to support curriculum review process?

(ii) How do you find with the current HEIs curriculum review process

(iii) What are your perceptions of the employability of ICT graduates in Malaysia?

(iv) What would you like to see on the proposed system with KM system elements that could help HEIs to support their employability and improvement of curriculum review process?

Interview notes were manually taken and transcribed. The extended field notes were then verified with the respondents in the process of "member checking" to facilitate credibility of responses. All errors, inaccuracies and omissions in the transcript were corrected.

Table 5.12: Demographic Information of Graduated Students

| Respond Code | Graduated Students (Pseudonym) | Interviewing Type | Degree Obtained | Gender | Working Experience |
|---|---|---|---|---|---|
| GS1 | Mr.Ong | Telephone Interview | Management Information System | Male | 2 |
| GS2 | Mr.Chin | Telephone Interview | Software Engineering | Male | 2 |
| GS3 | Ms.Ng | Telephone Interview | Computer Networking & System | Female | 2 |
| GS4 | Ms.Ko | Telephone Interview | Software Engineering | Female | 2 |
| GS5 | Ms.Susi | Telephone Interview | Management Information System | Female | 3 |
| GS6 | Ms.Nor | Telephone Interview | Information Science | Female | 3 |
| GS7 | Mr.Ali | Telephone Interview | Management Information System | Male | 1 |
| GS8 | Mr.Abu | Telephone Interview | Software Engineering | Male | 1 |
| GS9 | Mr.Zul | Telephone Interview | Information Science | Male | 1 |
| GS10 | Mr.Zi | Telephone Interview | Management Information System | Male | 1 |
| GS11 | Ms.Mun | Telephone Interview | Artificial Intelligent | Female | 2 |
| GS12 | Mr.Kui | Telephone Interview | Artificial Intelligent | Male | 2 |
| GS13 | Ms. Priya | Telephone Interview | Software Engineering | Female | 1 |
| GSG1 | Ms. Thivya & group | Faculty | Information Science | 5 Female | None |
| GS14 | Ms.Maha | Telephone Interview | Software Engineering | Female | 1 |
| GSG2 | Mr.Kon & group | Faculty | Artificial Intelligent | 4 Male | None |
| GS15 | Mr.Iyan | Telephone Interview | Information Science | Male | 2 |
| GSG3 | Ms.Kuna | Faculty | Information Science | 5 F, 2 M | None |

Table 5.13: Demographic Information of Current Students

| Respond Code | Current Students (Pseudonym) | Interviewing Type | Degree Obtained | Gender |
|---|---|---|---|---|
| CSG1 | Ms.Mina & group | Faculty | Management Information System | 5 Female, 3 Male |
| CS1 | Mr.Zee | Faculty | Multimedia | Male |
| CS2 | Mr.Yu | Faculty | Multimedia | Male |
| CSG2 | Mr.Mi & group | Faculty | Artificial Intelligent | 6 Male |
| CS3 | Ms.Zuan | Faculty | Multimedia | Female |
| CSG3 | Ms.Gi & group | Faculty | Information Science | 7 Female |
| CSG4 | Ms.Iswari & group | Faculty | Software Engineering | 2 Female 3 Male |
| CS4 | Mr.Ina | Faculty | Software Engineering | Male |
| CSG5 | Mr.Lalu & group | Faculty | Information Science | 4 Male |
| CSG6 | Ms.Nini & group | Faculty | Artificial Intelligent | 4 Female, 1 Male |
| CS5 | Mr.Badu | Faculty | Software Engineering | Male |
| CSG7 | Ms.Mg & group | Faculty | Information Science | 8 Female |

The interview with the HEIs took approximately 45 minutes to one hour. The demographic information is presented in Table 5.14. The interviews with the HEIs which include of both academic and non-academic staff were carried out using four (4) open-ended questions as posed below:

(i) What are the importance of KM practices in Faculty and collaboration with employers to support curriculum review process?

(ii) How do you find with the current HEIs curriculum review process and what are the issues in the current HEIs curriculum review process?

(iii) What are your perceptions of the employability of ICT graduates in Malaysia?

(iv) What would you like to see on the proposed system with KM system elements that could help HEIs to support their employability and improvement of curriculum review process?

Table 5.14: Demographic Information of Academic and Non-academic Staff

| Respondent Code | Staff (Pseudonym) | Gender | Staff type | Position |
|---|---|---|---|---|
| AS1 | Dr.Thyalan | Female | Academic Staff | Head / Assistant dean /dean |
| AS2 | Dr.Parames | Female | Academic Staff | Head / Assistant dean /dean |
| AS3 | Dr.Kong | Female | Academic Staff | Head / Assistant dean /dean |
| AS4 | Ms.Ter | Female | Academic Staff | Lecturer |
| AS5 | Dr.Lolu | Female | Academic Staff | Head / Assistant dean /dean |
| AS6 | Dr.Mai | Female | Academic Staff | Head / Assistant dean /dean |
| AS7 | Dr.Ee | Female | Academic Staff | Lecturer |
| AS8 | Dr.Pattu | Male | Academic Staff | Lecturer |
| AS9 | Dr.Kairul | Female | Academic Staff | Lecturer |
| AS10 | Dr.Amiza | Male | Academic Staff | Lecturer |
| AS11 | Mr.Khairul | Male | Academic Staff | Lecturer |
| AS12 | Dr.Sophian | Female | Academic Staff | Lecturer |
| AS13 | Dr.Sen | Male | Non Academic Staff | Lecturer |
| AS14 | Ms.Amirul | Female | Non Academic Staff | Officer |
| AS15 | Dr.Rama | Female | Non Academic Staff | Officer |
| NAS1 | Ms.Maimuna | Male | Non Academic Staff | Officer |
| NAS2 | Mr.Mimi | Female | Non Academic Staff | Officer |
| NAS3 | Mr.Saw | Female | Non Academic Staff | Officer |
| NAS4 | Ms.Jeeva | Male | Non Academic Staff | Officer |
| NAS5 | Ms.Vee | Female | Non Academic Staff | Officer |
| NAS6 | Ms.Shan | Female | Non Academic Staff | Officer |
| NAS7 | Ms.Yet | Female | Non Academic Staff | Officer |
| NAS8 | Ms.Sumi | Female | Non Academic Staff | Officer |
| NAS9 | Ms.Thivya | Female | Non Academic Staff | Officer |

On the other hand, the interview with employer took approximately 30 to 45 minutes. The demographic information is presented in Table 5.15. The interviews were carried out using four (4) open-ended questions as posed below:

(i) What are the importance of KM practices in Faculty and collaboration with employers to support curriculum review process?

(ii) How HEIs could improve the current curriculum review process?

(iii) What are your perceptions of the employability of ICT graduates in Malaysia?

(iv) What would you like to see on the proposed system with KM system elements that could help HEIs to support their employability and improvement of curriculum review process?

Table 5.15: Demographic Information of Employer

| **Respond Code** | **Company Information** | **Employer (Pseudonym** | **Gender** | **Position** | **Working Experience** |
|---|---|---|---|---|---|
| E1 | Petaling Jaya | Mr.Rov | M | Senior Officer | 12 |
| E2 | Kuala Lumpur | Mr.Yas | M | IT manager | 6 |
| E3 | Shah Alam | Ms.Mah | F | Director | 8 |
| E4 | Serdang | Mr.Koi | M | Officer | 5 |
| E5 | Shah Alam | Ms.Lip | F | IT head | 4 |
| E6 | Nilai | Ms.Yer | F | Officer | 4 |
| E7 | Shah Alam | Ms.Paw | F | IT head | 14 |
| E8 | Kuala Lumpur | Mr.Bew | M | Officer | 3 |
| E9 | Petaling Jaya | Ms.Vani | F | IT Executive | 4 |
| EG1 | Shah Alam | Ms.Hany & group | 1F, 2M | IT head | 4 |
| EG2 | Johor | Mr.Mui & group | 1M, 1F | Officer | 7 |
| EG3 | Shah Alam | Ms.Ram & group | 2F | Officer | 9 |
| EG4 | Kuala Lumpur | Mr.But & group | 2M | Officer | 6 |
| EG5 | Johor | Mr.Loo & group | 3M | IT Executive | 3 |
| EG6 | Selangor | Ms.Kaya & group | 2F | Officer | 5 |
| EG7 | Selangor | Mr.Sensi & group | 2M | Officer | 5 |
| EG8 | Johor | Mr.Poh | 1M | Officer | 8 |

### 5.3.1 What are the importance of KM practices in Faculty and collaboration with employers to support curriculum review process?

Generally, all the respondents involved in the interview (graduated students, current students, employers, academic staff and non-academic staff) indicated that they strongly supported that KM practices in faculty and collaboration with employers in the faculty would support curriculum review process. All the respondents stressed that KM is essential and useful in today's HEIs to keep itself updated. The researcher asked the respondents how well the KM practices in the faculty support the curriculum review process. During the interviewing, Ong (GS1), Ko (GS4), Susi (GS5), Mun (GS11), Thivya and group (GSG1), Maha (GS14), Iyan (GS15), Kuna and group (GSG3), Zee (CS1), Zuan (CS3), Gi and group (CSG3), Nini and group (CSG6), argued that the KM practices in the faculty could support the teaching and learning in the HEI.

During interviewing, the graduated student, Ong (GS1) argued that,

> *'...HEI - industry collaboration improves HEI teaching and provides more eligible talents for industry.' He also added that, KMS could improve the speed of curriculum revision and updating in HEI while keeping the good value of the curriculum.'*

This is supported by Ko (GS4) that,

> *'Having a good collaboration between HEI and industry will help students to relate the theoretical concept they learned in HEI with the industry environment. It will prepare the students better for their career.'*

During interviewing, the graduated student, Susi (GS5) added that,

> *'... good collaboration between industry and students will help students to relate the theoretical concept they learned in HEI with the industry environment.'* It will prepare the students better for their career

Mun (GS11) added that,

> *'...employers will be helpful in giving comments if KM exists between HEI and Industry'.'*

This is supported by Zee (CS1) that,

> *'KM should help HEI to improve its activities'*

Gi and group (CSG3) said that,

> *'KM will of course improve the current HEI curriculum settings'*

During the interviewing, all the academic staff and non-academic staff stressed that KM could improve the teaching and learning of a course.

According to Ms.Vee (NAS),

> *'... KMS could improve the administrative services related to teaching and learning with technology, improved responsiveness by monitoring and incorporating lessons learned from the experiences of colleagues, student evaluations, and corporate or other constituent input. '*

During the interviewing with the employers, Mr.Mui and group (EG2) stressed that,

> ' *KM in HEI could improve its teaching and learning process.*'

Besides improving the teaching and learning in the HEI, by implementing KM in HEI, it could improve the quality of the curriculum.

Chin (GS2) said that,

> *'... KMS could increase the quality of curriculum in HEI'.*

Ali (GS7) added that,

> '*... KMS will help HEI to improve the quality of its services to their students'*

Kon and group (GSG2) added that,

> *'KM will surely help HEI to move forward to develop quality graduates.'*

One of the current student, Nini and group (CSG6) stressed that,

> '*... KMS will help HEI to improve its current system as a whole'*

During the interviewing session with the academic and non-academic staff, both the respondents agreed that KM play very important role in improving the quality of the curriculum. This is also supported by the employers, Ms.Mah (E3), Ms.Lip (E5), Mr.But and group (EG4) and Mr.Poh (EG8) during the interviewing session.

The employer, Ms.Mah (E3) agreed that,

> *'KM could increase the quality of curriculum review process in higher education'.*

Ms.Lip (E5) added that,

> '….. it will help to improve the overall quality of curriculum review process as HEI is comparing with the employer's need'

Mr.But and group (EG4) supported that,

> '*... increase the quality of the curriculum in the HEI as it is looking at the demand from the employers to know exactly what they wanted.*'

KM practices in faculty collaboration with the employers could also support the curriculum review process in HEIs by increasing the relationship between employer, students and HEIs. The respondents stressed that it is important to improve the collaboration between the HEIs, employers and students. All the participants from all the groups agreed that it is important to improve the collaboration between HEIs and employers.

During the interviewing, Nor (GS6) said that,

> *'...it will improve the relationship between the students, HEI and Industry'*

Zul (GS9) also added that,

> *'... KM will definitely help HEI to compete with their competitors'*

This is supported by Priya (GS13) that,

> *'... KM will help HEI to have a better link with the employers and of course their students'*

For the current student, Yu (CS2), Mi and group (CSG2) and Mg and group (CSG7) supported that KM practices in faculty collaboration with the employers also could support the curriculum review process in HEIs by increasing the relationship between employer and HEIs.

Yu (CS2) added that,

> *'KM will help HEI to improve their communication with other (internal and external)'*

Mi and group (CSG2) also added that,

> *'... KM will surely help HEI to improve its communication with others"*

The employer, Mr.Roy (E1) argued that,

> '… *KM could improve the speed of curriculum review processes*

Ms.Mah (E3) added that,

> *'... collaboration between the industry and HEI will enable workers to access the information and knowledge and develop the new skills they need in a rapidly changing workplace. This will help them to improve their curriculum review process '*

Mr.Koi (E4) supported that,

> *'... collaborating with the industry, HEI can improve their relationship. This will help HEI to exchange and transfer the knowledge and technology. This will help them to improve their curriculum review process'*

This is added by Ms.Yer (E6) that,

> '*...It could tighten the relationship between HEI, industry and students. This itself will make the curriculum review process better'*

Mr.Sensi (EG7) argued that,

> '*... KM could increase the relationship between the employers and the HEI. It could also improve the relationship between HEI and student; and employer and student'*

Besides that, Ng (GS3) also added that,

> *'... KMS helps HEI to improve their curriculum in a more efficient and effective way.'*

Zul (GS9) also said that,

> '*KM will definitely help HEI to compete with their competitors'*

Based on the finding, it is clear that KM play an important role in the faculty to support curriculum review process. This gives a positive push towards the proposal to develop KM system in the faculty to connect the employers, HEI and students.

### 5.3.2 How well the respondents find the current HEIs curriculum review process?

In order to develop the proposed KM tool, it is important to understand the current curriculum review process and its issues. By getting a clear picture on the current HEIs curriculum review process and its issues during the process, it would be better to

develop the proposed KM tool that could help HEI to improve their overall curriculum review process in the future.

According to Ong (GS1),

> *'For curriculum review, I think the current system is focusing more on theoretical. I feel testing a student in both paper and technical examination will allow HEI to evaluate both efficiency and efficacy of the learning process for HEI curriculum. This will allow the students to develop a critical mind and a specific attitude to problem setting and solving which are vital for promoting innovation.'*

One of the graduated students, Abu (GS8) added said,

> *'... I feel the HEI is focusing more on theoretical knowledge in the practical courses compared to hands on experience.'*

This is added by Zul (GS9) that,

> *'... HEI giving lesser emphasize on practical knowledge'*

This is further supported by Zi (GS10) that,

> *'...I think the HEI focus more on theoretical knowledge'*

Mun (GS11) supported that,

> *'... I feel some of the technical subjects that I took during my studies did not conduct enough practical exercise for me. I realized that I was lack of practical knowledge in certain area when I started my work. '*

Kui (GS12) said that,

> *'... During my final year, I realized that the practical knowledge that I secure was not sufficient for me to complete my project by my own. '*

Based on the data gathering during the interview session, it is clear that the current curriculum is focusing more on theoretical than practical. These make the students to shows some dissatisfaction on the current curriculum. By keeping this into account, it is important to include a feature in the KM tool which could inform the HEI on the percentage of workload spend on theoretical and practical.

This is supported by further supported by Priya (GS13),

> *'... I feel that, only a small fraction of the course marks are allocated for the coursework which consist of assignments and projects. In some HEIs, the coursework are also equipped with quizzes and test.'*

One of the current students, Lalu (CSG5) said that,

> *'...I think nothing much to complain. But I'll be happy if more labs are conducted for those technical subjects'*

During the interview session, the respondents also stressed that there are lack of real time activities in the current curriculum.

Nini and group (CSG6) supported with the fact that,

> *'...curriculum is still lack of real time activities. Real time activities will give us exposure to outside world''*

During the interviewing, one of the academic staff, Dr.Suha stressed that,

> *'During the current process of updating the curriculum, HEI is contacting the industry only to decide whether the course or curriculum proposed by department or faculty is accepted.'*

This is supported by Dr.Manjit that,

> *'... with the current system, the faculty normally contacts the employer only during the curriculum review process. This is done in a short period of time. This limits the exposure period during the course enhancement process, which limit the reviewer committee knowledge during enhancement of curriculum.'*

One of the non-academic staff, Ms.Maimuna (NAS1) also stressed that,

> *'... Currently, there is a weak communication between HEI and industry. In order to improve the curriculum, the HEI need to have a better and continues communication with the industry. '*

Ms.Mimi (NAS2) added that,

> *'... The curriculum review members also look at what other HEIs are covering in their curriculum related to their courses. These situations prevent us from knowing what is exactly being asked in the job market by the employers.'*

Dr.Amirul (AS14) stressed that,

> *'... currently, the HEI conduct curriculum review two to three years once. During curriculum review process, the faculty is checking whether the curriculum is meeting the learning outcome but they pay lesser emphasis on whether the current curriculum is significant, which meets the industry's' need.'*

Based on the findings, it shows that the most of the academic and non-academic staff are not satisfied in the current curriculum review process. Most of them stressed that the relationship between the HEI and employers are not active and lively. This could be lack of tool that connects the HEI and employers. With the proposed KM tool, it could improve the relationship between HEI and employers. In return, it could help the curriculum review process in HEI. Figure 4.1 in Chapter 4 explains the process of curriculum review process in the current HEIs. Figure 5.6 extended Figure 4.1 by showing the issues in the current HEIs curriculum review process.

Label 'A' in Figure 5.6 shows the role of industry as a direct stakeholder for curriculum reviewing process in HEIs.

A head of department, Dr.Suha (AS1) expressed that,

> *'... during the current process of updating the curriculum, HEIs is contacting the industry only to decide whether the course or curriculum proposed by department or faculty is accepted. In other word, the communication is moving from the HEIs to industry. Besides the curriculum enhancement period, HEIs do not have regular communication with the industry'.*

Another head of department, Dr.Manjit (AS2) said,

> *'... the faculty normally contacts the employer only during the curriculum review process. This is done in a short period of time. This limits the exposure period during the course enhancement process, which limit the reviewer committee knowledge during enhancement of curriculum'.*

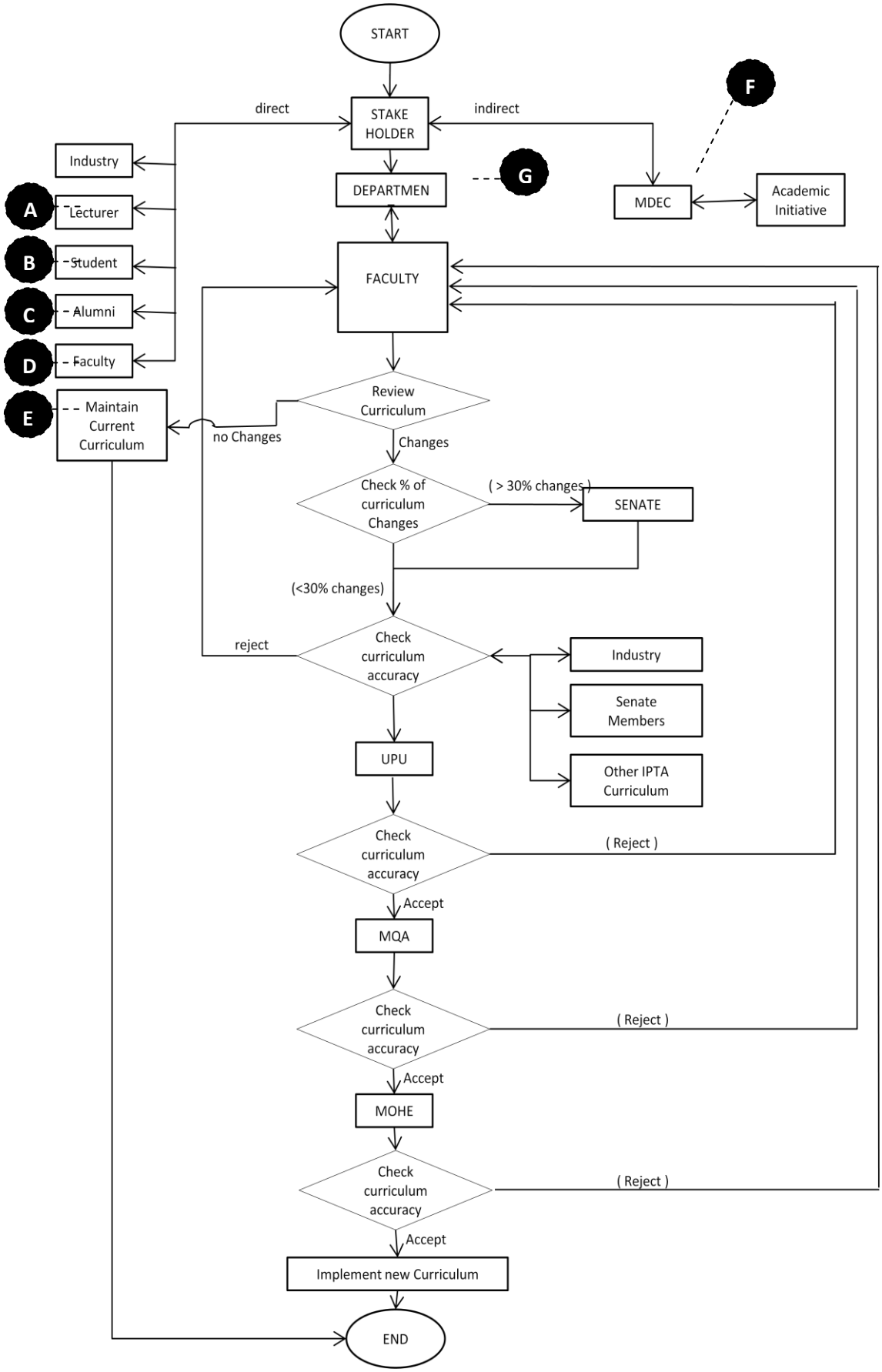


Figure 5.6: Lacking in current Curriculum review process

As one of the head of departments, Dr.Kong (AS3) said:

> *'... currently, we do not keep track the reports that we receive from the industrial training employers well on the comments of our students' performance. These enable us to help during the current curriculum review process'.*

One of the non-academic staff, Ms.Maimuna (NAS1) mentioned that,

> *'... currently, there is a weak communication between HEI and industry. In order to improve the curriculum, the HEI need to have a better and continues communication with the industry'.*

Another administrative staff in charge for curriculum review, Ms.Mimi (NAS2) added,

> *'... currently, we do contact employers for their feedback during the curriculum review process, but it is not sufficient.* The curriculum review members also look at what other HEIs are covering in their curriculum related to their courses. These situations prevent us from knowing what is exactly being asked in the job market by the employers'.

With the proposed KMS, HEIs could conduct the needs assessment of employers and businesses; provide opportunities for students to be familiar with knowledge and skills needed by industries; review and revise curricula within each sector to match needs, incorporating competency-based core subjects and soft skills. HEIs can also keep in touch with the job market to get up-to-date information on the happening in the market and the skills that employers are seeking from the fresh graduates. In this study, a KM will be designed which connects the students, HEIs and industry. Secondly, the lecturers (label 'B') in Figure 5.6 are also one of the direct stakeholders in curriculum review process. However, there are a number of issues discussed and highlighted during the interviewing process.

A non-academic staff, Ms.Saw (NAS3) highlighted that,

> *'... there are very small contributions from the lecturers during enhancement of the curriculum review process '.*

Another academic staff, Dr.Ter (AS4) reported:

> *'... the lecturers should keep themselves updated on the current subject(s) that has high demand in the job market. Based on this knowledge, they could propose the department or faculty on the changes or improvements in the curriculum'.*

A head of department, Dr.Lolu (AS5) mentioned:

> *'... currently, there is very minimal contribution from the lecturers during curriculum enhancement review process. To improve the curriculum quality, the lecturers need to inform their department on the need to update the curriculum'.*

One of the administrative staff in charge for curriculum review, Mr.Jeeva (NAS4) added:

> *'... we get poor feedback from the lecturers unless the head of departments from each unit forces their staff to review their course curriculum and provide feedback to enhance the current curriculum'.*

This is supported by another head of department, Dr.Mai (AS6) that,

> *'... there is no proper contribution from the lecturers. The head of department need to place the pressure on the lecturers to get their feedback during enhancing the curriculum review process. The lecturer may get feedback from the students on their opinion on the subject (s) that they are currently teaching and update to their respective head of department'.*

Label ‘C’ in Figure 5.6 shows the role of student as a direct stakeholder for curriculum reviewing process in HEIs.

Mi and group (CSG2) said:

> *‘... I do provide my feedback on the subjects or courses to my HEI by responding to the course evaluation form every semester. But I don’t see the changes even after some time’.*

This is supported by Zuan (CS3) that,

> *‘... I will discuss with my lecturers if there is any issue in the subjects that I’m enrolled’.*

Iswari and group (CSG4) added that,

> *‘... Sometimes, the basic textbook proposed in the course structure does not match with the syllabus. Even after complaining to the lecturer, there was no any revision in the course structure’.*

An academic staff, Dr.Ee (AS7) argued that,

> *‘... currently all the faculty students are required to submit the course evaluation form for all subjects that they enrolled every semester. Although the students are giving feedback on the subjects, but not much consideration is taken while updating the curriculum’.*

Another academic staff, Ms.Kairul (AS9) opposed to the previous one clarifies:

> *‘... the students are not aware the importance of their course evaluation form. Some of the students just blindly tick the options in the form. These do not give a proper guide to the curriculum review committee members during curriculum enhancement review processes’.*

This is supported by an academic member, Dr.Pattu (AS8) that,

> *'... there is less weightage given to students' course evaluation form. I personally feel that the department or faculty needs to take consideration on the students' comments on the courses during enhancing the curriculum review process'.*

One of the administrative staff, Ms.Vee (NAS5) in charge for curriculum review added:

> *'... currently, we do give consideration on student's comments, but the weightage need to be improved'.*

These shows, the HEI do not allot sufficient emphasis on the student's feedback of their courses during the current curriculum review process.

Label 'D' in Figure 5.6 shows the role of alumni as a direct stakeholder for curriculum reviewing process in HEI.

An academic staff, Dr.Amiza (AS10) said:

> *'... although the alumni members in UM are active, but not much consideration is given and taken based on the alumni's feedback'.*

A head of department, Dr.Khairul (AS11) added that,

> *'... there is lesser weightage given on alumni's feedback on current curriculum. I feel that, alumni's feedback is an important contribution towards curriculum development as they are currently in the job market. So, faculty needs to give high priority to the feedback given by alumni members'.*

An academic staff, Dr.Sophian (AS12) opposed to the previous one clarifies:

> *'... the alumni is only active verbally during gathering. They do not write any suggestions or comments in the form provided to them. This enables the HEI to look at the holes or issues in the current curriculum'.*

Another academic staff, Dr.Sen (AS13) agreed to the above, said:

> *'... the alumni members are not providing sufficient feedbacks which help the HEI to enhance the curriculum review process. The HEI need to gather as much important information as possible during the alumni gathering from the alumni members which help the committee to enhance the curriculum review process'.*

Label 'E' in Figure 5.6 shows the role of faculty as a direct stakeholder for curriculum reviewing process in HEIs.

A head of department, Dr.Amirul (AS14) said:

> *'... currently, the HEI conduct curriculum review only two to three years once. During curriculum review process, the faculty is checking whether the curriculum is meeting the learning outcome but they pay lesser emphasis on whether the current curriculum is significant, which meets the industry's' need'.*

A non academic staff, Ms.Shan (NAS6) mentioned that:

> *'... the HEI is updating their curriculum by benchmarking their course with other pubic universities (IPTA- research universities)'* .

A non-academic staff, Ms.Yet (NAS7) added:

> *'... during the curriculum review process, the HEI decide on the curriculum enhancement by referring to the Association for Computing Machinery (ACM) Curriculum'.*

So, in order to improve the current curriculum, the departments in the faculty need to give more emphasis on whether the proposed curriculum meets the current industry needs. This can be done by improving the current relationships with the industry. So, the proposed KM tool could help to encourage the employers to update HEI with the latest skill by filling-up the job vacancy pages.

Label 'F' in Figure 5.6 shows the role of MDEC as a stakeholder for curriculum review process in HEI (see section 4.3).

A Head of department, Dr.Rama (AS15) said:

> *'... there is no proper communication between the faculty and MDEC*. With the current relationship level with MDEC, the HEI does not get MDEC's feedback on their students' performance in the industry contribution report. In order to improve the curriculum development, there should be proper two way communication between the faculty and MDEC. The faculty need to take extra effort to know how is their students performing during their courses which help the student to improve their educational quality. Besides getting feedback from MDEC, HEI also could ask the students who attended the courses provided by MDEC. '

Once the relationship between MDEC and HEIs is improved, it will be very helpful for HEI during the curriculum review process. Label 'G' in Figure 5.6 shows the role of department as a direct stakeholder for curriculum reviewing process in HEI.

A non-academic staff, Ms.Sumi (NAS8) said:

> *'... the department staff is not active enough to initiate improvement or introducing new curriculum in the faculty'.*

This is supported by another non-academic staff, Ms.Soma (NAS9),

> *'... the academic and non-academic staff needs to take extra initiative to attend seminars, workshops and conferences to get themselves updated on the latest topic and issues discussed in the job market. By doing so, they may contribute to their department or faculty by giving constructive information to improve their current curriculum'.*

Based on the finding, it is clear that overall the graduated students, current students, academic staffs and non-academic staffs are not satisfied with the current HEI curriculum. So, the proposed KMS will help HEI to support the curriculum review process.

During the interviewing, the employers were asked on how HEI could improve the current curriculum review process. A lot of valuable data were collected.

According to Mr.Roy (E1),

> *'... HEI could improve the communication with the employers in the job market to know the latest happenings. This will help them to improve their curriculum review process.'*

Mr.Yas (E2) argued that,

*' ... technical talks will provide technological importance that is within or outside their curriculum design. This will help them to improve their curriculum review processes*

Mr.Mui and group supported that,

*'... technical visits will help HEI to bridge the gap between academic training and real company experiences. This will help them to improve their curriculum review process'*

Based on the interviewing conducted, the respondents find the current HEIs curriculum review process could be still improved especially by improving the relationship between the industry, HEIs and students. With the proposed KMS in HEIs, it could improve the current curriculum review process.

### 5.3.3 What are the respondents' perceptions of the employability of ICT graduates in Malaysia?

Before the study could propose a KM tool in HEIs to support its curriculum review process, it is important to know the causes of unemployment among the ICT gradates in Malaysia. Mismatch of qualifications with employers' needs was identified as one of the causes of unemployment among the ICT graduates in Malaysia. Mismatch of qualifications with employers' needs means that the knowledge taught in HEIs and what is expected by the industry in the job market does not match. This is due to lack of demand and supply information on the labour market. With the proposed KMS, it could flow the information from the employer to the HEIs and vice versa.

Based on the interviewing, one of the employers, Ms.Lip feels that,

> *'... the universities are not providing the right knowledge to their students. This could be due to the fact that, HEI is not receiving the right requirements from the employer. This will cause mismatch between the employer and HEI'*

Lack of students' exposure to the job market is also pointed as one of causes of unemployment among the ICT graduates. The respondents feels that the current curriculum does not give a chance for students to get to know what is required in the job market in order for them to engage themselves in their future.

Ong, a graduated student (GS1) said,

> *'... graduated students' biggest concern when applying for a job is their level of readiness to work'*.

This is added by another graduated student, Chin (GS2) that,

> *'... the graduates are worried about whether they are well equipped with the knowledge to take on work responsibilities'.*

This is further added by a graduated student, Zul (GS9),

> *'... I find difficulties to adapt myself to the working environment as I was lack of exposure to the real job market during my studies'.*

This is supported by another graduated student, Susi (GS5) that,

> *'... i really had a hard time to get myself familiar in the company for the first few months during my first job. I feel this can be improved if the students are given more exposure to the job market'.*

During the interviewing, lack of soft skills was highlighted as one of the major causes of unemployment among the ICT graduates in Malaysia.

During interviewing, one of the graduated students, Ali (GS7) said,

> *'... although the graduates possess excellent results, they are unable to communicate effectively because they lack confidence'.*

This is supported by Zi (GS10) that,

> *'... I think poor command of English is one of the major contributions for unemployment among the graduates'.*

A current student, Mg and group (CSG 7) added that,

> *'... The HEI education should not be judged solely by the degree obtained at the end of our studies, but rather by the various experiences or knowledge that we pick up through co-curriculum activities on and off campus'.*

This is supported by another current students, Ina (CS4) that,

> *'... it is students' responsibilities to prepare for the competition in the global market'.*

An academic staff, Dr.Kong (AS3),

> *'...because of their communication problem. Besides that, they are also not confident with their skills and knowledge'*

During the interviewing, students attitudes were identified as one of the contributors to employment issues among ICT graduates.

According to a graduate student, Priya (GS13),

*'... graduates are not committed enough in looking for a job, especially those group of students who are from loaded family'.*

This is supported by Thivya and group that,

*'... Some graduates are not prepared to face challenges by entering into the job market' (GS14).*

This is further supported by Maha (GS14) comment that,

*'... when I graduated, I was not bold enough to take risk. It delays the process of my job seeking' (GS15).*

An academic staff, Dr.Suha (AS1) added that,

*'... the students are not working hard to secure a job in the job market. The HEI is investing a lot to improve their knowledge. But, we don't see the same effort from the students.'*

This is supported by another academic staff, Dr.Ter (AS4) that,

*'...because of their attitude. They need to work hard for their future life'*

A head of department, Dr.Lolu (AS5) stressed that,

*'...it's because of their own laziness. Some students are not good in their English. But I don't see many of them actually take interest to sharpen their language'*

During the interview, it was claimed that not challenging course syllabus is one of the contributor factors that cause unemployment issues among the ICT graduates.

An employer, Mr.Roy stressed that,

> *'... students are memorizing mountains of theories rather than exploring and getting to know new information on the latest happening in the market related to their ICT courses' (E1).*

This is supported by Mr.Hany and group (EG1) that,

> *'... I think not challenging course syllabus is one of the factors that cause unemployment in the job market'.*

This is supported by Abu (GS8), Zul (GS9) and Zi (GS10) that,

> *'...HEI is focusing more on theoretical knowledge in the practical courses compared to hands on experience'.*

This is supported by another graduated student, Mun (GS11) that,

> *'... some of the technical subjects that I took during my studies did not conduct enough practical exercise for me. I realized that I was lack of practical knowledge in certain area when I started my work'.*

Kui (GS12) added that,

> *'... during my final year, I realized that the practical knowledge that I secure was not sufficient for me to complete my project by my own. In general, ICT syllabus in Malaysian HEI emphasize on final examination. I realized my HEI follows the same method'.*

Priya (GS13) supported Kui argument that,

> *'... only a small fraction of the course marks are allocated for the coursework which consist of assignments and projects. In some HEIs, the coursework are also equipped with quizzes and test'.*

During the interview session, a head of department, Dr.Mai highlighted that,

> *'...because they are not good with their practical. When it comes to programming subjects, some students are active in the theoretical. But when they are asked to do the practical, they do not know how to do. This can be due to weak foundation in programming. I strongly feel that the Computer Science students need to take a number of Mathematics subjects in their first and second year to improve their logical thinking. '*

During the interviewing session, a group of respondents argued that industrial training or internship course play an important role in employment of an ICT graduate.

According to Thivya and group (GSG1),

> *'... industrial training should be longer with a quality hands on experience which is related to the course of study' They also added that '... internship course is very helpful to broaden the horizons of students by increasing their awareness of the world around them'.*

This is supported by Maha (GS14) that,

> *'... During my industrial training, I spend most of my time doing something that is not relevant to my studies such as the admin job' (GS14).*

This is further supported by Kon and group (GSG2) that,

> *'... I strongly agree that internship course could enhance students' academic performance and develop interpersonal skills and leadership skills'*

So, with the proposed KMS in HEIs to support the curriculum review process, it could improve many aspects such as improve the mismatch of qualifications with the employers' needs, improve the labour market demand and supply information in HEIs, improve students' exposure to the job market, improve the industrial training, improve the student's attitude, improve the student's soft skills, producing challenging course syllabus by highlighting to the HEIs was is required in the job market by the employers.

### 5.3.4 What would you like to see on the proposed system with KMS elements that could help HEI to support their employability and improvement of curriculum review process?

Before designing and developing the proposed knowledge management system tool in HEIs, it is important to gather some feedback from the respondents on their expectation on the proposed system with KMS elements that could support the employability of ICT graduates and the improvement of curriculum review process. During the interviewing, it is highlighted that, it is important for the KM element in the tool to address the skills and knowledge required by the employers to the HEIs.

The respondents stressed that the KM element in the KM tool need to show the skills and knowledge wanted by the employers. This is supported with the fact that, the information on skills and knowledge could be presented in the form of charts or graph.

This could save the HEI's time by providing rich information in a short report during the curriculum review process.

According to a graduated student, Ong (GS1),

*'... it is good to show the skills and knowledge wanted by the employers'*

This is supported by Chin (GS2) that,

*'...HEI should update the students on the latest skills required by the employers'*

Ng (GS3) also adde that,

*'...my faculty could guide me the skills that is in demand in the market'*

Susi (GS5) stressed that,

*'... instate of showing all the skills required, may be there should be a statistics diagram or chart that shows only the top 10 skills required the most in the job market'*

Another graduated student, Nor (GS6) also added that,

*'The students need to be well informed on their course and the carrier'*

Abu (GS8) supported Nor that,

*'... there should be a proper way which illustrate the skills and knowledge required in the job market to the faculty'*

Mun (GS11) also added that,

*'the faculty should know how much theory and practical subjects thought in the course for the students'*

One of the head of school, Dr.Suha stressed that, the proposed KMS should include,

> *'...there should be a statistics that shows the variance between the employer's demand on skills and what is being included in HEI curriculum'.*

Dr.Kong supported Dr.Suha by adding that,

> *'For the variance, you should decide the action to be taken based on the percentage difference between the employer and the HEI. '*

One of the non-academic staff, Ms.Maimuna highlighted that,

> *'... there should be a statistics that shows what are the skills and knowledge covered in the course and what are lacking. This should be based on what the employers are asking'*

When the respondents were asked on the type the results should be presented, the respondents came with many ideas as discussed below.

Kui (GS12) argued that,

> *'the proposed system should compare the skills and knowledge thought and asked by the employers in the table form'*

Thivya and group (GSG1) added that,

> *'It should analyze and produce the results in the form of table or bar chart'*

Maha (GS14) supported Thivya and group that,

> *'... it should show its results in chart which compares the skills and knowledge'*

Ko (GS4) highlighted that,

*'there should be a page where the current and graduated student are able to apply for job online'*

Zi (GS10) also argued that, the proposed system should include,

*'...there should be a function to upload students resume on the system which goes direct to the employer'*

Kon and group (GSG2) added that,

*'the student should be able view the job vacancy, filter the vacancies available based on their interest and apply online'*

Dr.Amiza (AS10) also added that,

*'... KMS should allow our graduated students to apply for job vacancies'*

Ali (GS7) mentioned that,

*'... it should link the employers, faculty and students. This will provide valuable information for faculty and help them in improving the curriculum.'*

Zul (GS9) stressed that the proposed KMS should include,

*'... the system suppose to highlight the subject(s) that is in danger and propose the action to be taken'*

Besides that, Kuna and group (GSG3) also added that,

*'... once they system identify the lack ok skill / knowledge in the course, the system should propose an effective action to take''*

Dr.Ter (AS4) supported Kuna and group that,

> *'... besides highlighting the competencies that are lacking, the system should propose the action to be taken based on the variance. This will give a complete system to the faculty'.*

Dr.Ee (AS7) supported Zul, Kuna and Dr.Ter by adding that,

> *'...you may do a link to the subjects. By clicking on the subject, it should show the skills and knowledge that is taught. Based on that, the system could feedback to the user how they could improve the course.'*

Mr.Poh (EG8) added that,

> *'...KMS able to inform or trigger the faculty if any of the course is in 'danger' zone, in a situation where the skill is in demand by not offered in the course'*

Based on the data that was gathered during the interviewing session, it stressed that it is important to show the results that is gathered from the employer in the form of table, charts or graphs. In addition to that, the respondents also stressed that the KM tool should highlight the course that is critical condition in case the course is lack of the skills and knowledge required by the employers. During the interviewing session, the respondents were asked on some of the considerations that should be given while designing the KMS pages.

Mina and group (CSG1) stressed that,

> *'... the system should be very focus on the job title in the employers page as the job title could be very broad'*

Mi and group (CSG2) added that,

*'the system should show the results of the skills required into two categories, viz soft skills and hard skills.*

Iswari and group (CSG4) further stress that,

*'... the system should allow the employer to invite the successful candidate for interview through the system itself'*

Lalu (CSG5) argued that,

*'...the system should display the summary of each course on the system'*

Mg and group (CSG7) highlighted that,

*'... there should be a page that allow the students to upload their resume to the employers'*

Dr.Manjit (AS2) also added that,

*'There should be a option where the faculty able to choose the course that they are interested in'*

A non-academic staff, Ms.Mimi (NAS2) added that,

*'...have the option of arranging the skills and knowledge wanted in ascending form. This will give a clear picture to the faculty on the skills and knowledge that are lacking in the current curriculum.'*

Mr.Jeeva added that,

> *'...the administrator's page should be separated from the main page through login page. When the user enters the username and password, it should identify the type of visitor'*

Dr.Mai supported Mr.Jeeva argument and added that,

> *'...the administrator should be able to identify if the students, faculty and employers are valid respondents. I think it's good if the students could view the employer's comments on the skills and knowledge. It will give an idea for the student on their courses and future '*

Dr.Rama (AS15) added that,

> *'... the results need to be in the form of table or graphics, where the faculty need not to waste time understanding the variance.'*

This is supported by Mr.Yas (E2) that,

> *'... it is a good idea to have a table which clearly display the skills under HEI and the skills required in the industry'*

This is further supported by the employer, Mr.Hany and group (EG1) that,

> *'The results should be presented in graphic report, as it is easier for the curriculum review members in HEI to make decision'*

Another employer, Mr.Roy (E1) mentioned that,

> *'...I'll be very happy to participate with the KMS and I expect the system is always updated with the skill and knowledge requested by the employers. This will give the flexibility to the employers while entering the job vacancies with the skills and knowledge'.*

One of the officer, Mr.Mui (EG2) and group also added that,

> *'... it will be good if the employer given the option to filter the job application based on their interest and invite the applicant for an interview with just one click'*

Mr.Koi (E4) also added that,

> *'... it is good if you could separate the hard skills and soft skills required in the employer's job vacancy page'*

One of the employers, Ms.Lip (E5) also added that,

> *'... the KMS should be user friendly to ensure that the employers continuously contribute to the proposed system'*

Ms.Yer (E6) also added that,

> *'... the system should allow the employers to view the application form and the attached resume in a user friendly manner'*

The KMS page need to be carefully handled to ensure that the employer enjoy their revisit to the HEI webpage on the road to invite applicant for an interview by filling up the page with all the skills and knowledge that is required. So, by considering the essential requirements from the end-users or the customers of the proposed KMS in HEI, it will ensure that the proposed KMS in HEI will be helpful and useful for the curriculum review process. Besides that, the proposed KMS also should provide benefits for the HEI, employers and students.

## 5.4 SUMMARY

This chapter concludes that, students, HEIs and employers are very supportive to the idea of implementing KM tool in HEIs as shown in the results. As shown in the conceptual framework with WST, it is shown that the KM tool could ensure well developed curriculum that meets employers' as they support the HEIs to create employment based curriculum which involve the employer, HEIs and students by developing a strong relationship between HEIs and employer. This is shown in layer three of the conceptual framework (Technology layer). By introducing the KM tool, it could improve the overall processes and activities in the HEIs (layer four). Besides that the KM tool also could provide the skills and knowledge required and uploads job vacancies by the employers, develop stronger relationships between employer, HEIs and students. This will link the students to the job market as discussed in layer 5 (product and services) of the conceptual framework. The customers of this KM tool as identified in this study are the students, HEIs, employer, general community, business and professional bodies and government (layer 6). Layer seven shows the outcomes of this study. That is to enhance the curriculum review process and enhance the student's skills and knowledge. By doing so, it could improve the employability as discussed in this chapter. By accomplish the outcomes, it could achieve the ultimate goal of the study which is to produce competent students to the job market. Chapter 6 explains the System Design, development, implementation and testing. It discusses how KM tool support HEIs to enhance its curriculum review process.