INTERNSHIP STUDENTS' WORKPLACE COMMUNICATION SKILLS:
WORKPLACE PRACTICES AND UNIVERSITY PREPARATION

Ena Bhattacharyya
Shahrina Bt M Nordin
Rohani Bt Salleh
ena_bhattacharyya@petronas.com.my
shahrina_mnordin@petronas.com.my
rohanisalleh@petronas.com.my
Universiti Teknologi PETRONAS, Malaysia

Abstract

A graduate’s ability to communicate effectively can greatly affect their career development in the future workplace. Communication lecturers need to be equipped with the knowledge of the communicative needs of their technical students’ future working environment. With such awareness and knowledge, lecturers would be able to make learning more relevant and meaningful to ease the transition of undergraduates from an academic setting to the workplace environment. Questionnaires were given to a set of final year technical students who had just returned from their 8-month industrial internship training at various organizations. The study seeks to identify essential internal and external communication activities (written and oral) practiced by the organizations at the workplace. Feedback was also obtained from the students’ with regard to the university practices and preparation required for workplace communication. The findings of this research will also provide an insight into the adequacy of university preparation for effective communication in an environment far different from the university setting. Thus, guiding these students in accordance with workplace requirements will not only bring about relevant and meaningful learning, but also result in effective participation in the said discourse community. The paper will also discuss the pedagogical implications of its findings.

Keywords: communication skills, internal and external communication activities, industrial internship, technical students, discourse community.

1 Introduction

The era of globalization in the 21st century and the increasing mobility of engineering professionals around the world has placed a tremendous impact on the employers demands of prospective graduates or technical students seeking to be employed in the future workplace (Patil, 2005). Engineers of the 21st century are not only required to possess technical knowledge but be equipped with the relevant soft skills for effective workplace communication purposes (2005: 50). In fact, Nguyen (1998) fittingly reverberates that “an ideal engineer is expected to possess a diversity of skills and attributes, balanced with technical competency and non-technical competency” (1998: 65).

Employers concerns are mirrored through numerous communication studies (Artemeva, 2008; Dunbar, Brooks & Miller, 2006; Schnell 2006; Jin Xiao, 2006; Morreale, Osborn & Pearson, 2002; Grapsas & Ilic, 2001; Pinelli, Barclay & Kennedy, 1995) which resonate the need for prospective graduates to be technically competent, ie equipped with engineering (hard skill) and professional (soft skill) competency to be marketable and competitive in the industry. Engineering skills generally include technical knowledge while professional or “soft” skills include process skills, social skills or generic skills.
Common descriptions of these skills include project management skills, presentation skills, interpersonal/people skills, communication skills, creativity, problem-solving skills, flexibility for teamwork and individual work (Ziegler, 2007).

Furthermore, with the advent of globalization, the communication demands on engineers continue to escalate as workplace demands expect professional engineers to be equipped with additional global skills for communication “with international partners across the borderless professional global village and community” (Patil, 2005: 49). As indicated by Patil (2005), global skills include knowledge of foreign language proficiency, cultural development background, international business concepts and international technical issues.

Moreover, Norback & Hardin (2005) point out that workplace demands and challenges increase rapidly with time and globalization. Employers augment the need for graduates to be equipped with workplace communication skills as specified by Amare & Brammer (2005) which mention employers’ frustration toward prospective engineers’ inadequate writing skills for the job. Employers complain that “many prospective engineering employees fail to know how to write on the job, despite exposure to professional writing courses” (2005: 188). Prospective engineers not only have to be technically proficient but more importantly be able to communicate their ideas (Miller C.R., Larsen, J. & Gaitens, J., 1996).

Thus, the objective of this study is to identify the frequency of internal and external communication activities (written and oral) practiced by the organizations at the workplace and indicate their opinion on the adequacy of university preparation for effective workplace communication through language courses offered in the university.

In this context, internal communication refers to written and oral exchanges within the organization while external communication activities refer to said exchanges with outside parties such as vendors and other clients. Students were required to comment on the following dimensions:

- written communication skills (business letters, emails, internal memorandum, proposals, reports, instructions and general writing)
- oral communication skills (formal presentations, meetings, non-technical discussions, team communication, lead discussions, technical discussion, telephone conversations, briefings).

2. Communication Skills In The Workplace

According to Levitt (2001), the importance of communication skills is undoubtedly an important skill for practicing engineers as “communication can be an engineers’ strongest ally or his/her worst enemy” (2001:1). Communication skills is seen as essential tool or skill used by all workforce levels in any industry. Communication experts take a step further by defining specific skills in communication. Communication skills is defined as the “exchange of information, facts, feelings and emotions between people in that the individual can impart things and news to others to affect their behavior or direct it in a certain way to achieve a certain objective” (http://www.squ.edu.om/cdo/commskills).

The importance of communication skills as a communicative tool is recognized and acknowledged as an indispensable skill by stakeholders from both the industry and education sector, that graduates must be equipped with for future employment needs at the workplace. Literature states that employers rank communication skills as top the list of qualities for entry-level, executive and blue-collar positions but “rarely see these potential qualities projected during an interview” (McKay, 2007). Miller (1996), points out that “communication practices in the workplace are changing so fast that it is difficult to exactly keep track of the said practices” (1996: 4). Norback & Hardin (2005), further amplify the struggle of
engineering students when these students “have no concrete examples of workplace writing practices to emulate from companies” (2005: 413).

Concerned stakeholders (such as communication lecturers), need to familiarize themselves with the types of workplace communication activities to better equip their students with essential communication skills required in the workplace as employers demand such expectations. In this context, stakeholders denote decision makers and participants from the academic and industry practitioners involved in the learning and teaching of workplace communication activities. Decision makers refer to policy makers in the Engineering Education Curriculum. Participants include education practitioners & learners engaged in the teaching and learning of communication skills in the university.

What then are the kinds of workplace communication practices expected of graduates in the said discourse community? The term discourse community essentially refers to “a collection of individuals sharing mutually defined practices, beliefs, and understanding over an extended period of time in the pursuit of a shared enterprise” (Wenger, 1998 as cited in Barab & Duffy, 1998). In this context, the discourse community here refers to participants involved in the Industrial Internship Program (henceforth referred to as IIP) of the institution of higher learning (elaborated in the background of the study).

2.1 Workplace Communication Skills and Engineering Curriculum: Bridging The Gap

A look at existing communication studies (Thomas, 2007; Schnell, 2006; Gray, Emerson & Mackay, 2005; Hovde, 2005; Paretii & Burguyone, 2005; Sharp, 2004; Whiteside, 2003; Reimer 2002; Riley, Furth & Zimmer, 2000) indicate discussion on various workplace communication aspects such as importance of communication skills at the workplace, integration of workplace communication skills, disparity between the academia, industry and practitioners’ communication needs and challenges. In fact, many experts do not address the question of why engineering students are unprepared but concentrate more on addressing communication problems that exist (Ziegler, 2007; Dunbar, 2006).

Norback & Hardin (2005) are among the few who pinpoint the deficiencies in engineering graduates’ communication skills. They believe that graduates are unprepared to handle rhetoric, situated learning, and communication in the workplace. Other studies on workplace communication (Thomas, 2007; Sarjit & Lee, 2006; Norback & Hardin, 2005; Amare & Brammer, 2005; Artemewa, 2005) comment on disparity issues on communication skill requirement, insufficient teaching materials, lack of “concrete examples from companies” between the industry and academia. Yet, limited literature is however, available on the various types of communication activities practiced in the engineering workplace. As reiterated by Thomas (2007), with the increasingly fast paced era of the business world, “it seems more important than ever that academics attempt to bridge this gap by collaborating with practitioners and organizations” (2007: 284).

In addition, the recent implementation of Outcome Based Education (OBE) indicated through the Engineering Criteria 2000 of the Accreditation Board for Engineering and Technology (ABET) in the Engineering curriculum indicate the need for changes in the teaching and learning process of engineering programs within the institutions of higher learning. With OBE, the focus is on quantifying learner outcomes achieved by students at the end of each course taken in the institutions of higher learning. In

---

1 The Engineering Criteria 2000 was first published in 1995 and formally adopted by ABET in 1997. Criteria 2000 represents a major shift in ABET philosophy to a process based locally-designed educational objectives, within the general framework prescribed by Criteria 2000, and specific educational outcomes, both of which are to be assessed on a continuous basis.
fact, the ABET Engineering Criteria 2000, asks that students become aware of the social impacts of their professional work as well as be able to “communicate effectively” (Hovde, 2005: 1). ABET 2000 (Norback & Hardin 2005: 414), accentuate the need for more communication instruction to be provided for engineering graduates following results of two engineering surveys, that indicate the “lack of the written and oral communication skills among engineering graduates” and the “gap in the competency for communication skills”. Similarly, Johari et al (2004) argues that emphasis on communication is essential in preparing engineers to perform useful functions in the industry, in line with the guideline from the Engineering Accreditation Council2, Malaysia. The study is also timely as it reiterates the current global workforce dilemma as revealed in a Malaysian daily, The STAR (17/08/08) which calls for close cooperation between industries and universities.

In view of this disparity between practitioners and academia, concerned stakeholders (such as communication lecturers) need to acquire a better understanding of frequently practiced workplace activities to enhance existing communication programs. Knowledge of workplace communication activities would lessen the “boundaries and foster closer collaborative environment between the industry and academia” (Vest, D., Long, M., Thomas, L., & Palmquist, P., 1995: 12). In order to develop workplace communication activities, it is essential that an attempt at understanding the types of workplace communication activities is first put in place.

3. Background of The Study

3.1 English Language Program
To facilitate a clearer understanding of the current study, a brief insight is provided of the existing English Language Programs and Industrial Internship training program offered to the technical students in the university. The university referred to is a higher learning institution in Malaysia where various engineering and technology courses are offered at foundation, undergraduate and postgraduate level.

With reference to the English Language Program in this institution of higher learning, students are offered four basic language courses at foundation and undergraduate level. English Language 1 and English Language 2 are offered in the Foundation program while Technical Professional Writing (TPW) and Professional Communication Skills (PCS) are part of the undergraduate program. TPW is essentially a writing course, while PCS deals with group and individual presentations. Both TPW and PCS are three-credit hour language compulsory courses. Students are encouraged to complete the said language courses prior their Industrial Internship Program (IIP).

3.2 Industrial Internship Program (IIP)
As part of the university requirement, students in this institution are required to undergo the Industrial Internship Program (IIP) during their tenure of studies. The purpose of the IIP is to expose students to the world of work and provide students an opportunity to relate theoretical knowledge learnt with real application in the industry. The objectives of the IIP include introducing students to work culture and industrial practices, exposure to potential employers and foster goodwill among the academia and the industry. The IIP is coordinated by the Students Industrial Internship Unit (SIIU) which determines the student placement at selected companies. The IIP carries sixteen credit hours and lasts for thirty-two weeks or eight months.

2 EAC has been admitted as a provisional signatory to the Washington Accord in 2001, an international agreement amongst the members (UK, USA, Malaysia, Singapore etc) to recognize each other’s engineering graduates.
During the attachment program, students are supervised and assessed by a panel of team members comprising of both industry practitioners (such as plant supervisor) and members of the academia, who are all members of the IIP discourse community. During the said attachment program, students immerse themselves as participants in the professional workplace or companies. Students are expected to participate in all internal and external workplace activities and tasks as assigned by the industry practitioners and employers of the workplace. At the end of the training program, students are required to write and present a final report of their industrial attachment program. The written report forms part of the students’ coursework assessment. After eight months of industrial internship training, these students return to the university to complete their final year of studies.

Thus, according to the researchers, these students (as former participants immersed in workplace practices during the IIP) denote to be an appropriate source of informants to elicit initial feedback on the types of external and internal communication practices conducted in the companies.

4. Research Methodology

4.1 Respondents of the Study

The respondents were from final year students who have gone through industrial internship which is part of the university’s requirement. Two hundred questionnaires were randomly disseminated to the final year students and 90.5% of the questionnaires were returned to the researchers. A total of one hundred and eighty one (181) engineering students therefore were involved as respondents in the study. From the total number of 181 respondents, 55.2% were male students while 44.8% were female students. The respondents comprised of 96.1% Malaysians, while international students formed 3.9% of the respondent ethnic background. All respondents had completed the writing course (TPW). As for the presentation course (PCS), 126 (69.6%) had taken the course, 15 (8.3%) did not take the course and 40 (22.1%) were currently taking the course. Table 1 provides the breakdown of the total number of respondents from each engineering program.

Table 1: Respondents According To Program

<table>
<thead>
<tr>
<th>STUDENTS</th>
<th>PROGRAMME</th>
<th>B Eng ME</th>
<th>B Eng CHE</th>
<th>B Eng EE</th>
<th>B Eng CVE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td>57</td>
<td>26</td>
<td>13</td>
<td>4</td>
<td>100</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td>16</td>
<td>32</td>
<td>27</td>
<td>6</td>
<td>81</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>73</td>
<td>58</td>
<td>40</td>
<td>10</td>
<td>181</td>
</tr>
</tbody>
</table>

The largest respondent group is from the Mechanical Engineering followed by respondents from Chemical Engineering, Electronics and Electrical Engineering program and Civil Engineering. This phenomenon is naturally expected as the figures are indicative of the program intake during the enrollment period of the students in the university.

In addition, the student demographics also provide an insight of the respondent industry placement. Statistics indicate that 60.2% were in the oil and gas industry, followed by 12.2% in the manufacturing

---

3B Eng ME denotes Bachelor of Mechanical Engineering, B Eng CHE denotes Bachelor of Chemical Engineering, B Eng EE denotes Bachelor of Electronics and Electrical Engineering and B Eng CVE denotes Bachelor of Civil Engineering.
industry, 5.5% in research, 5% in the construction industry with the rest spread out in other industries such as consultancy, transportation, telecommunications and others. In terms of company placement, 40.9% were attached to PETRONAS and its Operating Units or OPU, 16% in local Malaysian companies, 11% in Malaysian Multinational Companies, 28.2% in foreign multinational companies and 3.9% in other types of company. A multinational company refers to “a corporation that has its facilities and other assets in at least one country other than its home country with offices and/or factories in different countries and a centralized head office where coordination of global management is done” (Investopedia, 2008). Table 2 illustrates the student placement in companies during the said IIP where the majority of the respondents were placed as trainees in PETRONAS and its OPU throughout Malaysia.

Table 2: Respondent Placement In Companies (In Percentage)

<table>
<thead>
<tr>
<th>NO</th>
<th>TYPE OF COMPANY</th>
<th>FREQUENCY</th>
<th>STUDENT PLACEMENT HIGHEST TO LOWEST (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PETRONAS and Operating Unit</td>
<td>74</td>
<td>40.9</td>
</tr>
<tr>
<td>2</td>
<td>Foreign Multinational Company</td>
<td>51</td>
<td>28.2</td>
</tr>
<tr>
<td>3</td>
<td>Local Malaysian Company</td>
<td>29</td>
<td>16.0</td>
</tr>
<tr>
<td>4</td>
<td>Malaysian Multinational Company</td>
<td>20</td>
<td>11.0</td>
</tr>
<tr>
<td>5</td>
<td>Others</td>
<td>7</td>
<td>3.9</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>181</td>
<td>100</td>
</tr>
</tbody>
</table>

4.2 Research Instruments

This study utilized a quantitative approach to elicit the students’ perceptions of workplace communication practices and adequacy of university preparation. For the purpose of this study, a questionnaire comprising of 45 items (adapted from Dyke, 2006; Morreale et al., 1993; Miller et al., 1996) was utilized. The questionnaire was divided into five sections namely Section A on student demographics, Section B on internal workplace communication activities, Section C on external workplace communication activities, Section D on university preparation for the workplace communication activities and Section E on industry details.

To obtain feedback for Section B and C, a 5 point likert scale range (where “1” indicates “Not at All” to “5” for “Very Often”) was utilized for frequency on communication practices. In Section D, a 6 point likert scale (with “0” to indicate “Not applicable” to “5” to indicate “Very Well”) was used to envisage items related to adequacy of university preparation. To test the reliability of the scales used, Cronbach’s Alpha was applied to estimate the internal consistency of the dimension to measure the reliability of the items (Hair, J.F., Anderson, R.E., Tatham, R. L., & Black, W.C., 1998; Malhotra, 2004). The alpha values of the said dimensions of the questionnaire are stated in Table 3.

---

5 See Appendix A for list of items.
6 Hair et al (1998) & Malhotra (2004) states that alpha values recorded higher than 0.6 value can be noted as reliable items.
Table 3: Cronbach Alpha Values of Each Dimension

<table>
<thead>
<tr>
<th>DIMENSION</th>
<th>INTERNAL COMMUNICATIO N</th>
<th>EXTERNAL COMMUNICATIO N</th>
<th>ADEQUACY OF LANGUAGE COURSE PREPARATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>WRITTEN</td>
<td>0.74</td>
<td>0.71</td>
<td>0.86</td>
</tr>
<tr>
<td>ORAL</td>
<td>0.81</td>
<td>0.91</td>
<td>0.87</td>
</tr>
</tbody>
</table>

According to literature studies (Hair et al., 1998; Malhotra, 2004), alpha values higher than 0.6 can be noted as reliable. Thus, with alpha values ranging from 0.71 to 0.91, the scales in the study can therefore be considered as reliable.

5. Findings And Discussion

5.1 Internal Communication: Written Communicative Events and Its Frequency Of Practice

The discussion henceforth provides an insight of the perceptions of the technical students’ initially on the internal written practices followed by oral communication practices of the companies involved in IIP. Table 4 indicates the “Frequency of Internal Communication: Written Practice (In Percentage)” showing the highest practiced to the least practiced written task within the company.

Table 4: Frequency of Internal Communication: Written Practice (In Percentage)

<table>
<thead>
<tr>
<th>TASK</th>
<th>very often</th>
<th>often</th>
<th>sometimes</th>
<th>rarely</th>
<th>not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPORT</td>
<td>53.0</td>
<td>26.5</td>
<td>13.3</td>
<td>6.1</td>
<td>1.1</td>
</tr>
<tr>
<td>EMAIL</td>
<td>40.3</td>
<td>28.2</td>
<td>19.3</td>
<td>5.5</td>
<td>6.6</td>
</tr>
<tr>
<td>INSTRUCTION/MANUAL</td>
<td>22.7</td>
<td>28.2</td>
<td>23.8</td>
<td>15.5</td>
<td>9.9</td>
</tr>
<tr>
<td>GENERAL WRITING</td>
<td>21.5</td>
<td>37.6</td>
<td>26.5</td>
<td>12.7</td>
<td>1.7</td>
</tr>
<tr>
<td>PROPOSAL</td>
<td>10.5</td>
<td>16.6</td>
<td>34.3</td>
<td>18.2</td>
<td>20.4</td>
</tr>
<tr>
<td>MEMO</td>
<td>5.5</td>
<td>18.2</td>
<td>24.9</td>
<td>19.9</td>
<td>31.5</td>
</tr>
<tr>
<td>BUSINESS LETTER</td>
<td>5.0</td>
<td>11.0</td>
<td>24.3</td>
<td>23.8</td>
<td>35.9</td>
</tr>
</tbody>
</table>

As depicted in Table 4, findings suggest that reports are most highly practiced writing task (53%), followed by the use of email (40.3%), instruction at 22.7% and general writing (21.5%). This feedback lends support to findings by Miller et al. (1996), where written documents are essential requirements in organizations. The importance of reports is acknowledged by Kmiec (2004) & Kreth (2000), where reports are multidisciplinary collaborative technical writing requirement in teaching engineering communication. Moreover, Keane & Gibson (1999), confer that writing forms an “essential day-to-day routine of the engineering office environment” (1999: 116). As indicated in the table, general writing (37.6%) occurs “often” in the companies. Moreover, written instructions or procedural manuals are also frequent writing tasks performed within engineering companies (Keane & Gibson 1999; Gupta & Ervin, 1997).

The findings also suggest the frequent use of electronic mail (40.3%) as a form of instantaneous feedback amongst staff members within the company. As indicated in Amare & Brammer’s study (2005), emails are highly used as it “reduces the need for oral communication among employees at the workplace” (2005:12). Vest et al (1995) states that with emails, large amounts of technical information can be disseminated to large groups of recipients prior meetings or discussions at the workplace. As mentioned in Vest et al (1995), discussions via email can take place back and forth among recipients prior final
decision making of a subject matter (1995:14). In addition, Skovholt (2006), also reiterates the high dependence on email as a central tool for workplace communication.

The present findings also suggest that written proposal (10.5%), memo (5.5%) and business letters (5%) are used minimally in companies. This finding however, is in contrast to previous studies (Kreth, 2000; Keane & Gibson, 1999; Gupta & Ervin; 1997) which ranked memos, manuals and letters as its top three writing tasks. As indicated by Miller et al (1996), one possible reason for this change could possibly be linked to time, speed and change in engineering workplace writing trends and requirements. In relation to low usage of memos, Amare & Brammer (2005) mention the inconsistent input from industry practitioners and the academia as a reason for its low usage in the companies. The present finding is helpful as it provides an insight of current written workplace practices of companies involved in the IIP.

5.2 Internal Communication: Oral Communicative Events and Its Frequency Of Practice
The next finding from the study looks at the frequency of internal oral communication activities in the company. The finding for this dimension is indicated in Table 5 on “Frequency of Internal Communication: Oral Practice (In Percentage)”. Students feedback suggest that such companies involved in the IIP place considerable importance on collaborative work and frequent discussions in the form of meetings (40.9%), participating in team communication (37.6%) and frequent non-technical discussions (35.9%). This finding is relevant and can be linked to Hovde (2005: 3), which states that “the ability to communicate effectively in teams is central to effective global projects” (Sadri & Flammia, 2003 as cited in Hovde, 2005). This finding echoes similar sentiments of global skill requirement of prospective engineers in the workplace (Thomas, 2007; Schnell, 2006; Patil, 2005). Thomas (2007: 288) adds that with globalization, the functional nature of organizations shifts as “work becomes more customer focused, teams have to be formed across functions to create better designs and work processes becomes more efficient.”

Table 5: Frequency of Internal Communication: Oral Practice (In Percentage)

<table>
<thead>
<tr>
<th>TASK</th>
<th>very often</th>
<th>often</th>
<th>sometimes</th>
<th>rarely</th>
<th>not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEETING</td>
<td>40.9</td>
<td>24.9</td>
<td>22.7</td>
<td>8.8</td>
<td>2.8</td>
</tr>
<tr>
<td>TEAM COMMUNICATION</td>
<td>37.6</td>
<td>30.4</td>
<td>24.3</td>
<td>5.5</td>
<td>2.2</td>
</tr>
<tr>
<td>DISCUSSION (NON-TECHNICAL)</td>
<td>35.9</td>
<td>37.0</td>
<td>18.8</td>
<td>6.6</td>
<td>1.7</td>
</tr>
<tr>
<td>TECHNICAL DISCUSSION</td>
<td>18.2</td>
<td>38.7</td>
<td>28.7</td>
<td>12.2</td>
<td>2.2</td>
</tr>
<tr>
<td>PRESENTATION</td>
<td>12.2</td>
<td>26.5</td>
<td>40.3</td>
<td>16.6</td>
<td>4.4</td>
</tr>
<tr>
<td>TELEPHONE CONVERSATIONS</td>
<td>11.0</td>
<td>25.4</td>
<td>23.8</td>
<td>16.0</td>
<td>23.8</td>
</tr>
<tr>
<td>LEAD DISCUSSION</td>
<td>6.1</td>
<td>17.7</td>
<td>31.5</td>
<td>23.2</td>
<td>21.5</td>
</tr>
<tr>
<td>BRIEFING</td>
<td>3.9</td>
<td>11.0</td>
<td>27.6</td>
<td>22.7</td>
<td>34.8</td>
</tr>
</tbody>
</table>

In addition, workplace requirements fundamentally demand engineers to have sound technical knowledge due to its core job function and involvement in technical discussions. Technical discussions are “very often” (18.2%) practiced in some companies while others practice this task “often” (38.7%). Technical discussions are a norm and technical competency is essential. Studies (Thomas, 2007; Schnell, 2006; Artemewa, 2005; Norback & Hardin, 2005) reiterate the need for engineers to be technically competent. Technical discussion is the highest “often” (38.7%) oral task compared to all the oral tasks.
The finding on presentation as a “very often” (12.2%) and “often” (26.5%) practice also confirms with Norback & Hardin (2005), where presentations are ranked as important workplace tasks among engineers and supervisors. As for telephone conversations, only 11% state that this is a “very often” oral task while a higher frequency indicates that it is practiced “often” (25.4%) in engineering companies. This feedback confirms with literature review which states higher dependence on written documents (Miller et al, 1996). As for lead discussions, a small number practice this oral task “very often” (6.1%) while a greater majority practice this task “sometimes” (31.5%). One possible explanation is the time and experience required of novice engineers “to be familiar with engineering concepts and workplace terminologies” used in internal communication practices (Miller et al, 1996: 12). As mentioned by Miller, “too much is at stake if miscommunication occurs as companies may risk loosing their business or clients” (1996: 11).

Briefings are not practiced “very often” (3.9%) while the others indicate that it is practiced “often” (11%) or even “sometimes” (27.6%). However, a fair number of students indicate that it is “rarely” practiced (22.7%) while the vast majority indicates that it is “not at all” practiced (34.8%). This task may not be frequently practiced due to its ad hoc nature of meeting attendees. Interestingly, this finding constitutes a change in the trend of workplace practice as opposed to Dickson & Hargie (1999) which mention the receptivity among Northern Ireland organizations toward briefings. Other possible explanation why briefings are not frequently practiced maybe students’ lack of familiarity with such practice. As indicated by Hovde (2005), briefings should be inculcated in the engineering classroom practice to familiarize students with the said event which will eventually allow better participation in the business community (Thomas, 2007).

The findings on internal communication workplace practice indicate certain similarities and differences with earlier studies conducted on written and oral communicative practice. In addition, the present findings on internal communication practice indicate the effect of globalization on current workplace written and oral demands of companies involved in the IIP.

5.3 External Communication: Written Communicative Events and Its Frequency Of Practice

The discussion ensues forth with an insight on external communication written communicative events and its frequency of practice by the companies involved in the IIP.

Table 6 on “Frequency of External Communication: Written Practice (In Percentage)” provides a glimpse of the most to least frequently practiced form of external written practice of the company.

<table>
<thead>
<tr>
<th>FREQUENCY OF EXTERNAL WRITTEN COMMUNICATION PRACTICE</th>
<th>FROM HIGHEST TO LOWEST (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TASK</td>
<td>very often</td>
</tr>
<tr>
<td>EMAIL</td>
<td>19.9</td>
</tr>
<tr>
<td>REPORT</td>
<td>19.9</td>
</tr>
<tr>
<td>GENERAL WRITING</td>
<td>9.4</td>
</tr>
<tr>
<td>INSTRUCTION/MANUAL</td>
<td>8.8</td>
</tr>
<tr>
<td>PROPOSAL</td>
<td>5.5</td>
</tr>
<tr>
<td>MEMO</td>
<td>3.4</td>
</tr>
<tr>
<td>BUSINESS LETTER</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Without a doubt, emails are “very often” (19.9%) forms of written communication used with external parties. It is also an “often” (25.4%) practice among companies. Emails “reflect the speed we conduct business today” (Pfeiffer, 2006; Thomas, 2007) and is a convenient form of global communication as “it
allows the creation of mailing lists for multiple recipients” (Pfeiffer, 2006: 222). As noted by Vest et al (1995), emails are preferred as “complex content matters tend to be unclear in face-to face communication can be clearly written in emails” (1995:14). Moreover, emails are “low in cost, convenient and immediate” (Turner & Reinsch, 2007 as cited in Thomas, 2007).

In addition, reports (19.9%) form a common writing task with external companies. As noted by Miller et al (1996), reports form a highly used form of written document with external companies. Related workplace communication studies (Gupta & Ervin, 1997; Miller et al, 1996) cite high usage of written documentation (general writing 9.4%, instruction/manual 8.8%) as a common written task in engineering companies and firms. Memos (3.4%) and business letters (2.2%) take on a low note as communication by memos are described as “impersonal” (Dickson & Hargie, 1999). This form of communication, considered as a “dictatorial approach” were reported to be “ineffective and impacted poorly on industrial relations” as opposed to “meetings and face-to-face dialogues” which was generally preferred by most employees (1999: 22).

5.4 External Communication: Oral Communicative Events and Its Frequency Of Practice

The discussion henceforth takes a peek at external communication oral communicative events and its practices of companies involved in the IIP as shown in Table 7 on “Frequency of External Communication: Oral Practice (In Percentage)”. Meetings depict to be a “very often” (19.3%) to “often” (26%) form of oral practice among companies. Meetings are crucial workplace practice as “workplace issues can deliberated together in a common meeting place” (Dickson & Hargie, 1999: 14). Miller et al (1996) enunciate similar emphasis on meetings as an important component of workplace practice as it allows team members to convene and deliberate collectively prior decision making.

Table 7: Frequency of External Communication: Oral Practice (In Percentage)

<table>
<thead>
<tr>
<th>EXTERNAL COMMUNICATION: FREQUENCY OF ORAL PRACTICE FROM HIGHEST TO LOWEST (%)</th>
<th>very often</th>
<th>often</th>
<th>sometimes</th>
<th>rarely</th>
<th>not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEETING</td>
<td>19.3</td>
<td>26.0</td>
<td>23.2</td>
<td>16.0</td>
<td>15.5</td>
</tr>
<tr>
<td>DISCUSSION (NON-TECHNICAL)</td>
<td>17.1</td>
<td>28.7</td>
<td>23.2</td>
<td>16.6</td>
<td>14.4</td>
</tr>
<tr>
<td>TEAM COMMUNICATION</td>
<td>15.5</td>
<td>20.4</td>
<td>28.2</td>
<td>17.7</td>
<td>18.3</td>
</tr>
<tr>
<td>TECHNICAL DISCUSSION</td>
<td>11.0</td>
<td>18.2</td>
<td>32.0</td>
<td>19.9</td>
<td>18.8</td>
</tr>
<tr>
<td>PRESENTATION</td>
<td>8.3</td>
<td>13.8</td>
<td>27.1</td>
<td>17.1</td>
<td>33.7</td>
</tr>
<tr>
<td>TELEPHONE CONVERSATION</td>
<td>7.7</td>
<td>16.0</td>
<td>21.0</td>
<td>22.1</td>
<td>33.1</td>
</tr>
<tr>
<td>LEAD DISCUSSION</td>
<td>3.9</td>
<td>11.6</td>
<td>19.3</td>
<td>23.2</td>
<td>42</td>
</tr>
<tr>
<td>BRIEFING</td>
<td>3.9</td>
<td>8.8</td>
<td>15.5</td>
<td>23.8</td>
<td>48.1</td>
</tr>
</tbody>
</table>

The next most common form of oral task is that of non-technical discussion which is done “very often” (17.1%) to “often” (28.7%). Compared to internal oral communication practices (Table 5), team communication is takes on as a third most “very often” (15.5%) oral task. As reiterated by Thomas (2007), “as silos disintegrate, employees are responsible for sharing and integrating information and knowledge for greater effectiveness and efficiency” of business organizations to succeed in the 21st century (2007: 290). Technical discussions are “very often” (11%) to “sometimes” (32%) oral communication tasks practiced in companies as this practice is integral to an engineer’s profession (Artemewa, 2005; Patil, 2005). Presentations are also “very often” (8.3%) to “sometimes” (27.1%) practiced by the companies with external parties. An interesting point to note here is that in comparison to...
findings in Table 5, presentations seem to be practiced more frequently internally than as an external form of communication.

Telephone conversations are “very often” (7.7%) to “sometimes” (21%) practiced within companies. However, the findings also indicate that telephone conversations are kept to a minimum practice as 33.1% indicate it is “not at all” used in companies. This finding concurs with Miller et al (1996) which restate engineering companies dependence on written documents. Findings from Table 7 also indicate that lead discussions and briefings occur “very often” (3.9%) frequency with external parties. As indicated by Miller et al (1996), one possible explanation why lead discussions are “not at all” (42%) practiced with external parties could be time required for technical competency.

In addition, briefings are also practiced in moderation as an occasional oral task marked at “often” (8.8%) to “sometimes” (15.5%). The feedback generally indicates that briefings are not a frequent practice as 48.1% indicate “not at all”. This feedback signifies a change in the trend of oral workplace communication practice practiced in engineering companies as stipulated by Dickson & Hargie (1999) where briefings were embraced and conducted on a weekly or monthly basis in engineering companies in the 90’s.

The findings on external communication workplace practice indicate certain similarities and differences with earlier studies conducted on written and oral communicative practices within organizations.

5.5 Adequacy of Language Preparation: Writing Skills

In identifying the common internal and external communication practices within companies, the researchers were interested to find out if the students perceive to be adequately prepared for various writing skills in the workplace during their internship experience. As indicated in Table 8 on “Adequacy of Language Preparation: Writing Skills (In Percentage)”, students’ perceptions reveal that they receive varying emphasis on the different communicative events. In terms of ranking of adequacy and preparation of input for the written communicative event, students indicate that they receive the most input in report writing (21%), followed by general writing skills (15.5%), email (14.4%), proposal (9.9%), instruction/manual (6.6%), memo and business letters at 6.1%.

Students’ perception of language preparation in report writing skills input range indicate different preparedness from “very well” (21%), “well” (39.2%) to “average” (33.1%). Yet it is important to note that 5% imply to be “poor” and 1.7% state that they are “very poor” and not adequately prepared in report writing. None of the students comment if the input received is “not applicable” to the workplace demands during their industrial internship experience. It is then helpful to consider mild improvisations input on report writing to meet current workplace written practices. Input on reports, are essential as it forms the “everyday affair” for business and industry practitioners (Gupta & Ervin, 1997: 9).

For general writing preparation, the frequency of students indicate that input received has prepared them either “very well” (15.5%), “well” (38.1%) and 37.6% mention that they are of “average” capability in performing the general writing tasks in the workplace. Likewise, 5.5% feel that they are not adequately prepared (marked as “poor”) and 1.7% feel that input received was insufficient as they claim to be “very poor” in general writing skills. What is noteworthy is 1.7% perceive certain writing skills input as “not applicable”. The feedback is helpful to lecturers to provide some enhancement to the present writing course. A possible explanation is academic stance of the writing course as compared to workplace related writing tasks in the companies.
Table 8: Adequacy of Language Preparation: Writing Skills (In Percentage)

<table>
<thead>
<tr>
<th>TASK</th>
<th>very well</th>
<th>well</th>
<th>average</th>
<th>poor</th>
<th>very poor</th>
<th>not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPORT</td>
<td>21.0</td>
<td>39.2</td>
<td>33.1</td>
<td>5.0</td>
<td>1.7</td>
<td>0.0</td>
</tr>
<tr>
<td>GENERAL WRITING</td>
<td>15.5</td>
<td>38.1</td>
<td>37.6</td>
<td>5.5</td>
<td>1.7</td>
<td>1.7</td>
</tr>
<tr>
<td>EMAIL</td>
<td>14.4</td>
<td>28.7</td>
<td>43.1</td>
<td>6.6</td>
<td>3.9</td>
<td>3.3</td>
</tr>
<tr>
<td>PROPOSAL</td>
<td>9.9</td>
<td>37.0</td>
<td>40.9</td>
<td>6.1</td>
<td>3.3</td>
<td>2.8</td>
</tr>
<tr>
<td>INSTRUCTION/MANUAL</td>
<td>6.6</td>
<td>28.7</td>
<td>44.2</td>
<td>11.0</td>
<td>2.8</td>
<td>6.6</td>
</tr>
<tr>
<td>MEMO</td>
<td>6.1</td>
<td>25.4</td>
<td>49.7</td>
<td>7.7</td>
<td>4.4</td>
<td>6.6</td>
</tr>
<tr>
<td>BUSINESS LETTER</td>
<td>6.1</td>
<td>24.9</td>
<td>45.3</td>
<td>10.5</td>
<td>4.4</td>
<td>8.8</td>
</tr>
</tbody>
</table>

As for email input, 14.4% indicate that they are “very well” prepared with email writing skills, while others (28.7%) indicate they are “well” prepared but majority indicate that they are of “average” (43.1%) preparedness in these skills. The rest indicate they are “poor” (6.6%), “very poor” (3.9%) and some indicate that the skills learnt are “not applicable” (3.3%). This feedback clearly shows a mismatch between the current practices in the workplace (see Table 4 & 6), where emails are ranked as the top two written and oral tasks as compared to the “average” input received. Thus, it is possible that added input can be enhanced to the existing communication programme. Currently, email instructions are given cursory emphasis with brief mention on its application in the general rhetoric of writing. This finding concurs with communication workplace studies (Norback & Hardin, 2005; Kreth, 2000) which state the need for classroom activities to emulate real workplace events to ensure smooth transition from the university to the workplace as well as “empower students with concrete examples to enhance workplace effectiveness as professional communicators” (Nelson, 2003: 274).

As for proposal input preparation, 9.9% of the technical students indicate that the language programs have prepared them “very well” while 37% indicate they are “well” prepared in the said written task. However, input from the students via their industrial internship experience, indicate that majority feel that they are of “average” (40.9%) preparedness toward the said writing skill. In addition, 6.1% claim that they are not adequately prepared and “poor”, while 3.3% indicate they are “very poor” and 2.8% state that the skills learnt is “not applicable” in the workplace. In comparison to its practice (Table 4 & 6), input received can be enhanced to be compatible with the frequency of practice in companies. As noted by relevant workplace studies (Schnell, 2006; Paretti, 2005; Brammer & Ervin, 1999; Nguyen, 1998), it is envisaged that more authentic workplace communication activities be included in language communication programs to bridge the industry practitioner-academia divide.

In terms of input received on instruction/manual, a few students (6.6%) indicate that written input received has prepared them “very well” in the said task. In addition, 28.7% state that they “well” prepared. The majority indicate that they are of “average” (44.2%) adequacy. In relation to feedback on instruction/manual in Table 4 and 6, the findings in Table 8, also indicate a mismatch between the practice and input provided. A relatively high number of respondents (11%) indicate that input received is “poor” while some comment they are “very poor” (2.8%) while the remaining (6.6%) comment that the skills learnt are “not applicable”. The feedback received suggests the need for possible consideration to further develop the current program to meet workplace needs. This feedback concurs with literature on communication gap studies (Norback & Hardin, 2005) which reveal the need for students to be equipped with authentic communication instruction in classroom communication courses as it allows students to “readily see the relevance” and be “better equipped to apply the communication skills learnt in class to their jobs” (2005: 415).
In relation to input received on memo, 6.1% students indicate that input learnt has prepared them “very well” for the said written task, while 25.4% indicate that they are “well” prepared, with the majority of students indicating that they had “average” preparation in memo writing skills. A small number indicate that insufficient input was received as they are still “poor” (7.7%), while 4.4% claim that they are “very poor”. Besides, 6.6% of the students mention that the skill learnt is “not applicable” during in the workplace. Although memo is a less frequently practiced written task (Table 4 & 6), the input received on memo (as indicated in Table 8) is justified to suggest that improvements towards developing more authentic workplace materials can be developed to enhance students’ communication skills requirements in the companies.

The feedback on business letter preparation signify 6.1% perceive to be “very well” prepared in business letter writing skill, while 24.9% indicate that they are “well” prepared while the majority (45.3%) claim to be of “average” adequacy. A small number (10.5%) state that insufficient input is provided as they are “poor” in such skills while 4.4% imply “very poor” preparedness. Interestingly enough, 8.8% comment that the skills learnt are “not applicable” in the workplace. Again, input in Table 8 shows that content matter can be developed to suit workplace practices.

5.6 Adequacy of Language Preparation: Oral Communication Skills

In table 9 on “Adequacy of Language Preparation: Oral Communication Skills (In Percentage)” findings indicate that some students perceive input received has prepared them “very well” in formal presentations (21.5%), team discussions (19.3%), non-technical discussion practice (18.2%), formal meeting (14.9%), technical discussion (10.5%), lead discussion (10.5%), telephone conversation (7.2%) and briefing (6.2%).

Table 9: Adequacy of Language Preparation: Oral Communication Skills (In Percentage)

<table>
<thead>
<tr>
<th>TASK</th>
<th>very well</th>
<th>well</th>
<th>average</th>
<th>poor</th>
<th>very poor</th>
<th>not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>FORMAL PRESENTATION</td>
<td>21.5</td>
<td>38.1</td>
<td>33.7</td>
<td>1.7</td>
<td>2.8</td>
<td>2.2</td>
</tr>
<tr>
<td>TEAM DISCUSSION</td>
<td>19.3</td>
<td>41.4</td>
<td>32.6</td>
<td>3.9</td>
<td>1.7</td>
<td>1.1</td>
</tr>
<tr>
<td>DISCUSSION (NON-TECHNICAL)</td>
<td>18.2</td>
<td>43.1</td>
<td>30.9</td>
<td>6.6</td>
<td>1.1</td>
<td>0.0</td>
</tr>
<tr>
<td>FORMAL MEETING</td>
<td>14.9</td>
<td>36.5</td>
<td>37.0</td>
<td>7.2</td>
<td>2.2</td>
<td>2.2</td>
</tr>
<tr>
<td>TECHNICAL DISCUSSION</td>
<td>10.5</td>
<td>38.7</td>
<td>39.8</td>
<td>7.7</td>
<td>2.8</td>
<td>0.6</td>
</tr>
<tr>
<td>LEAD DISCUSSION</td>
<td>10.5</td>
<td>28.2</td>
<td>43.6</td>
<td>7.7</td>
<td>3.3</td>
<td>6.6</td>
</tr>
<tr>
<td>TELEPHONE CONVERSATION</td>
<td>7.2</td>
<td>20.4</td>
<td>43.1</td>
<td>11.0</td>
<td>6.1</td>
<td>12.2</td>
</tr>
<tr>
<td>BRIEFING</td>
<td>6.1</td>
<td>24.3</td>
<td>42.0</td>
<td>12.2</td>
<td>3.9</td>
<td>11.6</td>
</tr>
</tbody>
</table>

In terms of formal presentation, the majority of the students (38.1%) denote that sufficient input has been provided as they state they are “well” prepared in the said oral communicative event. In addition, 33.7% comment that “average” input is provided while 1.7% say there was insufficient input as they deem themselves to be “poor” in preparedness of such skills. In addition, 2.8% claim that input is inadequate as they are “very poor” in presentation skill while 2.2% indicate that skills learnt are “not applicable” in the workplace. The feedback lends a positive response to the existing language program but relevant content matter can be refined to replicate workplace situations.
With regard to team discussion, 19.3% indicate that the language program has prepared them “very well” to perform such task. The majority (41.4%) denote themselves to be “well” prepared in team discussions. This positive feedback could be related to the ample and rigorous practices done in the language courses in the institution of higher learning. 32.6% claim that input received allows “average” preparedness. Via the industrial internship experience, 18.2% students indicated that input received on non-technical discussion was “very well” while a vast majority (43.1%) indicated that they were “well” prepared for such communicative task. A fair number (30.9%) state that the input received allowed “average” participation and preparedness for such an event. At the same time, 6.6% remarked that they were not prepared or “poor” and 1.1% understood themselves as being ‘very poor” in the said skill. It is encouraging to note that none remarked that input provided was “not applicable” to workplace demands.

The findings show that 14.9% students perceive input and practice received on formal meetings in the institution of higher learning to be “very well”. A vast majority (36.5%) indicate that input received has prepared them “well” for the said task while 37% comment that they received “average” understanding of the said task. On the other hand, 7.2% perceive to receive insufficient input as they deem themselves to be “poor” and 2.2% as “very poor” in such skill. About 2.2% also mention that input obtained is “not applicable” at the workplace during their industrial internship experience.

A similar trend is detected in students’ feedback toward adequacy of language program preparation for technical discussion. Here, 10.5% comment that input received prepared them “very well” for the said communicative task at the workplace. Besides that, 38.7% indicated that they were “well” prepared while a vast majority (39.8%) commented that they had “average” preparation. As for input received on formal meetings, only 7.7% comment that they received insufficient input (marked as “poor”) and 2.8% indicated that they were “very poor” in such skill. On the other hand, it is encouraging to note that 0.6% note that input received is “not applicable” at the workplace organization. The feedback implies possible room to enhance current academic input to meet that of workplace communication needs.

In terms of input received on “lead discussion”, 10.5% noted that input received prepared them “very well” for the oral task at the workplace. At the same time 28.2% indicated that they were “well” prepared in leading discussions. A vast majority (43.6%) indicated that they of “average” preparedness in such a workplace undertaking. 6.6% commented that certain input received was “not applicable” at the workplace. This finding is helpful as it indicates the gap between workplace practices (see Table 5 & 7) on non-technical discussions, technical discussions and presentations in relation to input received. Communication lecturers may utilize the feedback as an indicator to enrich the existing communication program. Whiteside (2003) aptly confers that as the disparity between the academia and industry practitioners widens, it is crucial for educators to actually “go outside of classrooms, test the concepts of what engineering writers actually do” and “refine the concepts to suit academia discipline” (2003:304).

In reference to telephone conversation, the majority of the students indicate that input received prepared them “well” (20.4%) while 43.1% commented that input received was “average”. Likewise, added emphasis can be provided for such skill in the classroom as despite its rank in order of workplace practices, communication is still vital in any job performance (Miller et al, 1996). Feedback from 6.2% students indicate that input received has prepared them “very well” for the said activity during their industrial internship placement at companies. 24.3% indicate that input prepared them “well” while a majority (42%) indicated that input was “average”. On the other hand, 12.2% students mention that they were not prepared as they were “poor” with such communicative ability or skill. In addition, 3.9% comment that they received “very poor” input while 11.6% indicated that input received was “not applicable” in the workplace.
In conclusion, the findings reveal that there are various written and oral communication events practiced at different frequencies by related companies in the IIP. The findings also suggest that different communication practices maybe exercised for internal and external communication purposes of the companies. Students feedback also reveal positive indication of the current language courses offered in the university but enhancement can be suggested to the existing language programs to bridge the communication gap between the workplace and academic institution.

6. Suggestions and Recommendations

Findings from this study will help the educators realize the communication needs and practices expected out of interns at the prospective workplace. Findings from this study will also indicate the frequency of different communication practices at the workplace and provide possible suggestions for educators to realign their communication programs to meet the workplace needs of various companies. As reiterated by Gupta & Ervin (1997), the responsibility falls on educators to “empower students with good communication skills” to “help them see the importance and application of these skills in the competitive global workplace” (1997: 11).

The significance of the study is that employers and educators should collaborate and work closely together to better equip prospective employees of the workplace with relevant workplace communicative practices. Language courses need to theorize workplace communication to ensure that “real life” and “authentic” learning take place in the classrooms as “students require new skills to flourish in tomorrows’ workplace organizations” (Thomas, 2007: 294). With closer collaboration between the engineering community and academia on written and oral communication pedagogy, it is envisaged that students will develop necessary communicative skills required for effective communication in the workplace. Students who improve their communication skills are better prepared to contribute to the 21st century workforce.

References


41. Forge links with industries, local varsities told. (2008, August 17). *The STAR.*
BIOGRAPHICAL STATEMENT OF AUTHORS:

**Ena Bhattacharyya**, is a Senior Lecturer in the Department of Management and Humanities, Universiti Teknologi PETRONAS (UTP), Malaysia. She is currently pursuing her PhD studies with the Faculty of Language and Linguistics, University Malaya, Kuala Lumpur, Malaysia. She holds a Masters in English As A Second Language (MESL) from University Malaya and obtained her Bachelor of Arts (Education) Honors, from Universiti Sains Malaysia, Penang, Malaysia. She teaches Professional Communication Skills and Thinking Skills. Her research interests include communication skills, workplace communication, technical oral presentation, public speaking and thinking skills. She can be contacted at ena_bhattacharyya@petronas.com.my or enabhat12@yahoo.com

**Dr Shahrina Bt M Nordin**, is a Senior Lecturer in the Department of Management and Humanities, UTP, Malaysia. She completed her Phd. studies in Universiti Sains Malaysia, Malaysia. She started her career as a lecturer at Institut Teknologi Perindustrian, Johor Bahru and was then recruited as Assistant Lecturer, at Multimedia University, Melaka. She has a Masters degree in TESL from Universiti Teknologi Malaysia, Johor and obtained her first degree, in English Language and Literature, from International Islamic University Malaysia. She can be reached at shahrina_mnordin@petronas.com.my

**Dr Rohani Bt Salleh**, is a Senior Lecturer in the Department of Management and Humanities, UTP. She received her Ph.D in HRM from Leeds University, UK and her M.A (HRM) from Hull University, UK. Prior to joining UTP, she was an administrator for a private learning institution in Perak. She has served in a public university in Penang as a lecturer in the School of Management and taught at Open University on part-time basis. Her research papers have been presented in local and international conferences and research interests include human resource management, cross-cultural management and organizational behavior. She can be reached at rohanisalleh@petronas.com.my

Appendix A – Items In The Questionnaire

INTERNAL ORGANISATION/ IN-HOUSE COMMUNICATION

Please place a tick (/) and indicate in the columns provided for the following:

Frequency of each communication practice (within organisation) throughout industrial attachment

A. Written communication
   1. Business letters
   2. E-mails
   3. Internal memorandum
   4. Proposals
   5. Reports
   6. Set of Instructions/ Manual
   7. General writing

B. Oral Communication Skills
   1. Give formal presentations
   2. Participate in meetings
   3. Participate in non-technical discussions
   4. Oral communication in teams
   5. Lead discussions
   6. Integrate and communicate technical knowledge in discussion
   7. Telephone Conversation
   8. Conduct Briefing
EXTERNAL ORGANISATION/ IN-HOUSE COMMUNICATION
Please place a tick (/) and indicate in the columns provided for the following:
Frequency of each communication practice (within organisation) throughout industrial attachment

A. Written communication
   1. Business letters
   2. E-mails
   3. Internal memorandum
   4. Proposals
   5. Reports
   6. Set of Instructions/ Manual
   7. General writing

B. Oral Communication Skills
   1. Give formal presentations
   2. Participate in meetings
   3. Participate in non-technical discussions
   4. Oral communication in teams
   5. Lead discussions
   6. Integrate and communicate technical knowledge in discussion
   7. Telephone Conversation
   8. Conduct Briefing

ADEQUACY OF UNIVERSITY PREPARATION (LANGUAGE COURSES)
Based on your industrial attachment experience, please place a tick (/) and indicate the adequacy of
university preparation for effective communication in the industry through the following:

A. Writing Skills in the following:
   1. Business Letters
   2. Emails
   3. Internal Memorandum
   4. Proposals
   5. Reports
   6. Set of Instructions/Manuals
   7. General Writing

B. Oral Communication Skills:
   1. Give formal presentations
   2. Participate in formal meetings
   3. Participate in non-technical discussions
   4. Oral communication in teams
   5. Lead discussions
   6. Integrate and communicate technical knowledge in discussions
   7. Telephone conversations
   8. Conduct Briefing