A course on English for Professional Communication for engineering undergraduates in a technical university in Malaysia: A needs survey

Indra Devi S.
Technical University of Malaysia Melaka, Melaka, Malaysia
indradevi@utem.edu.my

Teh Zanariah Hj. Mohd Raus
Technical University of Malaysia Melaka, Melaka, Malaysia
tezhanariah@utem.edu.my

Abstract: In today’s climate of engineering education, there is an ever-increasing need to enhance the teaching and learning of professional communication skills which are often demanded by industrial advisory committees. In response to the above, this study aims to investigate the engineering undergraduates’ English for Professional Communication needs as well as their perception on the importance of Professional communication skills. The subjects of the study comprise 326 engineering undergraduates. The instrument for data collection include a questionnaire. The quantitative data are analyzed using the Statistical Package for Social Sciences (SPSS) Program. The theoretical aspects of the needs analysis are based on the needs analysis model by Dudley-Evans and St. John (1998). The findings of the study show that the undergraduates’ professional communication needs in terms of priority include grammar skills, responding and participating in interviews, conducting and participating in meetings, writing resume and cover letters for job applications, writing reports, delivering presentations, participating in group discussions and reading skills. These findings could be utilized for the designing of a syllabus and a textbook for a course on English for Professional Communication.

Keywords: professional communication, engineering undergraduates, needs survey

Introduction

As Malaysia propels towards a more knowledge-based and innovation-driven economy, future professional engineers of Malaysia too are required to move beyond being technically equipped. They need to obtain a wide range of expertise so that they would be able to operate successfully in inter- and multidisciplinary environments, cut across traditional disciplinary borders and boundaries and operate in complex business ecologies. The technical expertise that they acquire needs to be of world class standing and they’re critically required to possess strong written and oral communication skills so as to be able to create winning partnerships with foreign clients and high-technology industry leaders.
According to Chuah (2009), universities have to be responsive to all these changes and realign themselves to produce graduates who are adept in working with the new paradigms. Chuah (2009) reaffirms too that universities need to provide their students with greater experiential breadth of preparation in a variety of non-technical areas like communication, social science etc. so as to simultaneously develop in them the foundation they need in a complex evolving discipline.

Prescott (2010) posits that it is no longer sufficient for engineering undergraduates to have sound knowledge of engineering theory and practice alone. Prescott further elaborates that well-developed professional communication skills are essential for new engineers who hope to contribute to the profession and to build their career. Missingham (2006) too stresses that although conventional engineering curriculum strongly focuses on the development of technical knowledge and skills in students, employers are increasingly acknowledging that this traditional preparation is inadequate as graduates lack the wider range of written and spoken communication skills required to engage with members of other professional groups and with the broader community and thus, these has led tertiary institutions to develop curricular to address these needs.

Ballentine (2008) advocates that it has become common for engineering schools to look to English departments for showing compliance with the requirement of the Accreditation Board for Engineering and Technology (ABET) that all graduating engineers possess the ‘ability to communicate effectively. In response to these issues, it is crucial that university English Departments design core courses like English for Professional Communication that play an important role in fulfilling the requirements as well as to prepare engineering undergraduates such that they achieve their full potentials as future professional communicators. This requires a new look at one component of English for Specific Purposes (ESP) that is English for Professional Communication.

**Objectives of the Study**

This study aims to:
1. Investigate the engineering undergraduates’ professional communication needs
2. Identify their perception on the importance of professional communication skills

Thus, this study answers the following questions:
1. What are the needs of the engineering undergraduates with respect to professional communication skills?
2. What are the perceptions of the undergraduates on the importance of professional communication skills?

**Review of Related Literature**

As related in the introduction and the aforementioned objectives, this study investigates the undergraduates’ professional communication needs and identifies their perception on the importance of professional communication skills. In view of the above, this section reviews the
relevant literature related to Professional communication, technical universities in Malaysia and needs survey.

**Professional Communication**

Professional Communication encompasses written, oral, visual and digital communication within a workplace context. It is a new discipline that focuses on the study of information and the way it is created, managed, distributed and consumed. The field of professional communication is closely related to that of technical communication though professional communication encompasses a wider variety of skills. Professional communicators use strategies, theories and technologies to communicate more effectively in the business world (Wikipedia 2011).

**A Technical University in Malaysia.**

A technical university focuses on generating highly skilled engineers who have a good mastery of engineering skills which comprise both theoretical competency as well as practical competency. The graduates in these universities can be referred to as “application-and-practice oriented engineers’. The model of education system practiced in the four technical universities in Malaysia, namely, Universiti Teknikal Malaysia Melaka (UTeM), Universiti Malaysia Perlis (UniMAP), Universiti Malaysia Pahang (UMP) and Universiti Malaysia Tun Hussein Onn (UTHM) comprise general commonalities like focusing on specific engineering disciplines, spending more time in practical than in lecture rooms, enhancing collaboration with industries and also emphasizing on entrepreneurship and communication skills.

**Needs Survey**

Needs Survey is fundamental to an ESP / EAP approach to course design (Hamp Lyons, 2001:127). Hutchinson & Waters (1987:53) stress that any language course should be based on needs analysis. Hutchinson & Waters (1992) further define needs analysis on the basis of ‘necessities’ and ‘wants’ in order to classify between what the learners have to know and what the learners feel they need to know. They further reiterate that the focus is on the ‘lacks’ that represent the gap between the required proficiency in the target situation and the existing proficiency of the learners. This notion is reinforced by Dudley-Evans and St. John (1998) who argue that “needs analysis is the corner stone of ESP and leads to a very focused language course”.

Mehdi (2008) conducted a study on “Introduction to needs analysis” and made the assertion that the role of needs analysis in any ESP course is indisputable. Arif Ahmed (2010) elucidates that needs analysis is a process by which learners’ needs are determined and he stresses that more attention should be paid to the ‘what’ part, meaning the course content. In line with his findings, this study too looks into the professional communication needs of the engineering undergraduates so as to determine the content for the English for Professional Communication course.
MadeSujana (2011) posits that in establishing English competencies needed in a particular workplace, a course designer can start from target needs by analyzing responsibilities or tasks of professional workers in the target situation where the language is going to be used. The responsibilities are then translated into competencies (skills and sub-skills) needed in the workplace in order to be able to master the language skills needed in the particular workplace.

The theoretical aspects of the needs analysis in this study are based primarily on the needs analysis model by Dudley-Evans and St. John (1998). The modern and comprehensive concept of needs analysis proposed by Dudley-Evans and St. John (1998:125) encompass eight approaches. Table 1 below shows the three approaches that were considered for this study.

**Table 1 Approaches used in analyzing Professional Communication needs of engineering undergraduates**

<table>
<thead>
<tr>
<th>Approach</th>
<th>Specific Information for needs analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language information about learners</td>
<td>Looks at their current skills and language used (present situation analysis)</td>
</tr>
<tr>
<td>Learners lacks</td>
<td>Looks at the gap between the present situation and professional information about learners</td>
</tr>
<tr>
<td>Learners’ needs from course</td>
<td>What is wanted from the course (short term needs)</td>
</tr>
</tbody>
</table>

*Source: Adapted from Dudley-Evans and St. John (1998)*

**Methodology**

The instrument for data collection includes a questionnaire which is based on the adapted version of the needs analysis model by Dudley-Evans and St. John (1998). Alharby (2005) states that a majority of studies in needs analysis use questionnaires as the primary method of data collection. Hogue (2011) too indicates that questionnaires are thought to be the least consuming ways of collecting information, and this is why learners’ needs are usually specified through questionnaires which enable researchers to determine long-term aims and short-term objectives. The above statements concur with Dudley-Evans and St. John (1998) who have pointed out that the use of questionnaire is one of the main data collection method for needs analysis.

The respondents of the questionnaire comprise 326 engineering undergraduates from the Faculty of Mechanical Engineering, Electrical Engineering and the Faculty of Information and Communication Technology. The questionnaire is designed in 2 sections. Section 1 requests general background information regarding the subjects’ race, gender, faculty, level of study and information about English courses taken.

Section 2 is designed to retrieve specific information related to the undergraduates’ professional communication needs. The first part of this section requires a rating scale response in relation to their current professional communication skills or Present Situation Analysis which estimates strengths and weaknesses in their language and communication skills as well as learning experience.
The second part of this section looks into the learners lacks in terms of language skills. The third part is developed to identify the perception of the undergraduates on the importance of Professional Communication Skills. This section which uses a three-point Likert scale ranging from 1(not important), 2 (important) and 3(very important) provides information about what the learners want for the course or their short-term needs. The final part which consists of an open-ended question requests for information about suggestions on additional contents to be included in the course. The quantitative data are analyzed using the Statistical Package for Social Sciences (SPSS) Program. Frequencies and percentages are calculated for each item.

Findings and Discussion

The research findings of this study provide valuable insight on the engineering undergraduates’ needs with respect to Professional Communication Skills as well as their perception on the importance of the Professional Communication Skills. The statistics obtained from the questionnaire is presented in the form of frequencies and percentages as in the tables below.

Research Question 1
What are the needs of the engineering undergraduates with respect to Professional Communication Skills?

Table 2: Students’ rating on their current professional communication skills

<table>
<thead>
<tr>
<th>Skills</th>
<th>Weak</th>
<th>Average</th>
<th>Good</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent</td>
<td>Frequency</td>
</tr>
<tr>
<td>Grammar Skills</td>
<td>105</td>
<td>32.2%</td>
<td>185</td>
</tr>
<tr>
<td>Summarizing Skills</td>
<td>43</td>
<td>13.2%</td>
<td>219</td>
</tr>
<tr>
<td>Writing a recommendation report</td>
<td>63</td>
<td>19.3%</td>
<td>207</td>
</tr>
<tr>
<td>Writing a resume and cover letter for job application</td>
<td>81</td>
<td>24.8%</td>
<td>182</td>
</tr>
<tr>
<td>Responding and participating in job interviews</td>
<td>86</td>
<td>26.4%</td>
<td>182</td>
</tr>
<tr>
<td>Conducting and participating in meetings</td>
<td>84</td>
<td>25.8%</td>
<td>172</td>
</tr>
<tr>
<td>Participating in group discussions</td>
<td>32</td>
<td>9.8%</td>
<td>176</td>
</tr>
<tr>
<td>Delivering presentations</td>
<td>53</td>
<td>16.3%</td>
<td>197</td>
</tr>
<tr>
<td>Reading skills</td>
<td>18</td>
<td>5.5%</td>
<td>140</td>
</tr>
</tbody>
</table>
Table 3: Students’ rating on their current language skills

<table>
<thead>
<tr>
<th>Language Skills</th>
<th>Weak Frequency</th>
<th>Weak Percent</th>
<th>Average Frequency</th>
<th>Average Percent</th>
<th>Good Frequency</th>
<th>Good Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listening</td>
<td>37</td>
<td>11.3%</td>
<td>164</td>
<td>50.3%</td>
<td>125</td>
<td>38.3%</td>
</tr>
<tr>
<td>Speaking</td>
<td>72</td>
<td>22.1%</td>
<td>202</td>
<td>62.0%</td>
<td>52</td>
<td>15.9%</td>
</tr>
<tr>
<td>Reading</td>
<td>16</td>
<td>4.9%</td>
<td>127</td>
<td>39.0%</td>
<td>183</td>
<td>56.1%</td>
</tr>
<tr>
<td>Writing</td>
<td>64</td>
<td>19.6%</td>
<td>195</td>
<td>59.8%</td>
<td>67</td>
<td>20.5%</td>
</tr>
<tr>
<td>Grammar</td>
<td>116</td>
<td>35.6%</td>
<td>174</td>
<td>53.4%</td>
<td>36</td>
<td>11.0%</td>
</tr>
</tbody>
</table>

On the overall, 32.2% of the respondents have rated grammar skill as their weakest skill, followed by speaking skill e.g. responding and participating in job interviews (26.4%), as well as conducting and participating in meetings (25.8%). The findings reveal that the undergraduates’ professional communication needs in terms of priority include grammar skills, responding and participating in interviews, conducting and participating in meetings, writing resume and cover letters for job applications, writing reports, delivering presentations, participating in group discussions and reading skills. This findings concur with their rating on their current language skills as in Table 3 whereby it is found that they are weakest at their grammar skill (35.6%) followed by speaking (22.1%), writing (19.6%), listening (11.3%) and reading (4.9%). This is indicative of the fact that they have a great need to improve their grammar, speaking and writing skills.

Research Question 2
What are the perceptions of the undergraduates on the importance of professional communication skills?

Table 4: Students’ rating of their perception on the importance of professional communication skills

<table>
<thead>
<tr>
<th>Skills</th>
<th>Not Important Frequency</th>
<th>Not Important Percent</th>
<th>Important Frequency</th>
<th>Important Percent</th>
<th>Very Important Frequency</th>
<th>Very Important Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grammar Skills</td>
<td>13</td>
<td>4.0%</td>
<td>110</td>
<td>33.7%</td>
<td>203</td>
<td>62.3%</td>
</tr>
<tr>
<td>Summarizing Skills</td>
<td>12</td>
<td>3.7%</td>
<td>166</td>
<td>50.9%</td>
<td>148</td>
<td>45.4%</td>
</tr>
<tr>
<td>Writing a recommendation report</td>
<td>5</td>
<td>1.5%</td>
<td>119</td>
<td>36.5%</td>
<td>202</td>
<td>62.0%</td>
</tr>
<tr>
<td>Writing a resume and cover letter for job application</td>
<td>2</td>
<td>0.6%</td>
<td>59</td>
<td>18.1%</td>
<td>265</td>
<td>81.3%</td>
</tr>
<tr>
<td>Responding and participating in job interviews</td>
<td>4</td>
<td>1.2%</td>
<td>74</td>
<td>22.7%</td>
<td>248</td>
<td>76.1%</td>
</tr>
<tr>
<td>Conducting and participating in meetings</td>
<td>5</td>
<td>1.5%</td>
<td>104</td>
<td>31.9%</td>
<td>217</td>
<td>66.6%</td>
</tr>
</tbody>
</table>
As shown in the table above, 81.3% of the respondents indicate that writing a resume and cover letter for job application is very important to them. The other skills that are important to them in terms of priority include responding and participating in job interviews (76.1%), delivering presentations (73.6%), conducting and participating in meetings (66.6%), grammar skills (62.3%), writing a recommendation report (62.0%), participating in group discussions (54.9%), reading skills (50.6%) and finally summarizing skills (45.4%).

The open-ended question in the questionnaire aimed at getting feedback from the undergraduates on any additional content that they would prefer to include in the course. A majority of them have requested for online language activities and intensive grammar practice. Others have suggested that the content should include public speaking sessions, impromptu speeches, forum discussion, journal writing activities, writing on industry-based research topics, spelling and vocabulary exercises, exposure to industrial talks, industrial visits, exposure to conference presentations, language camps and foreign exchange programs.

**Conclusion and Implications**

The above findings bear a number of implications. In the first place, the respondents reveal that they are weakest at their grammar. This resonates with urgency for the faculties to come up with a multivariate approach to the teaching of grammar. Gyasi, Nartey & Coker (2011) elucidate that although current research in ESP places premium on sharpening learners’ skills in order to enable them to maximally function in the academic world and beyond, it is still felt that students are bereft of basic language concepts. Thus, this issue needs to be given serious consideration by the stakeholders.

The respondents reveal that they are also weak at speaking and writing skills. Statistics implicate that they need more practice in interviews and meetings rather than in delivering presentations. This concurs with findings by Myles (2009) who asserts in his research that technical students unanimously find speaking skills to be very challenging. According to Myles (2009), to communicate orally demands a high level of language proficiency and cultural knowledge. In his research, his respondents had agreed that giving formal presentations was much easier than initiating and maintaining a conversation. His respondents had further elaborated that using Microsoft Power Point in presentations made the process much easier. This sheds light on the fact that the engineering undergraduates require instruction in oral skills, primarily interpersonal communication and professional conversation in order to be able to communicate competently in a workplace setting.
Besides, a majority of the respondents (81.3%) perceive writing a resume and cover letter for job application as well as responding and participating in job interviews (76.1%) as being very important to them. This characterizes instrumental motivation and implies that they aim towards fulfilling their utilitarian goals. Their main purpose could be to secure a good job in future. This finding is consistent with Figoni & Levin (2009) who have indicated in their study that technical students exhibit high instrumental motivation. Anyway, motivation is indeed an important variable in second language acquisition. Brown (2000) too, points out that it is not uncommon for second language learners to be successful with instrumental purposes being the underlying reason for study.

This study contributes to our understanding of the engineering undergraduates professional communication needs which can be addressed in developing the objectives and content for a course on English for Professional Communication. It is also hoped that the findings of this study could serve as a guideline in the designing of a textbook with constructive activities for the course takers as well as provide them with a substantive understanding of the subject matter.

References


Biodata of authors:

1. Indra Devi, S. (indradevi@utem.edu.my)

Indra Devi, S. is a lecturer from the Department of Languages, Centre for Languages and Human Development, Universiti Teknikal Malaysia Melaka. She obtained her Diploma in English as second language from Universiti Malaya in 1993. Besides, she had received her first degree in B.Ed.TESL (Hons) from Universiti Putra Malaysia and an M.A. in TESL from Universiti Kebangsaan Malaysia. Her expertise is in TESL, ESP, Communication and Applied Linguistics.

2. Teh Zanariah Hj. Mohd. Raus (tehzanariah@utem.edu.my)

Teh Zanariah Hj. Mohd. Raus is currently attached to the Department of Languages, Centre for Languages and Human Development, Universiti Teknikal Malaysia Melaka. (UTeM). She obtained her B.A. (Hons.) in English Language and her M.A. in English Language (English for Specific Purposes) from Universiti Putra Malaysia. She has 11 years of experience teaching English and Technical Communication at the tertiary level. Her research interests include Genre Analysis, ESP and Learning Styles.