A Survey of Oral Communication Apprehension in English among ESP Learners in an Engineering Course

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ABSTRACT

Engineering graduates today need to possess both hard and soft competencies to work effectively in a competitive professional world. Among soft competencies highly valued in the engineering industry are effective oral communication skills (Grant & Dickson, 2006). In the Malaysian context, English has become the main language used in many established and reputed engineering companies. Hence, to be highly proficient in English is a much needed skill among engineering graduates. This study examined the oral communication apprehension in English of 193 final year chemical engineering students in Universiti Malaysia Pahang. A set of questionnaires comprising the Personal Report of Communication Apprehension PRCA-24 (McCroskey, 1984) was administered to these ESP students. Results indicated that most of these engineering students (70.7%) perceived themselves to have moderate communication apprehension and only 10.7% had high communication apprehension in communicating in English. Practical implications and the need for specifically addressing communication apprehension among engineering students are discussed.

Keywords: ESP, oral communication apprehension, engineering students, oral communication skills

Introduction

In today’s competitive and increasingly globalised job market, engineering graduates need to possess excellent English communication ability and a high level of confidence for them to be well-accepted by the professional community. Besides having sound knowledge of the fundamentals in engineering, they are expected to give clear oral instructions and make effective oral and written presentations to engineering and non-engineering audience. This is in line with one of the competencies listed by international bodies and Malaysian engineering accreditation councils such as the Accreditation Board of Engineering and Technology (ABET), the
Washington Accord and Malaysia Engineering Accreditation Council (EAC). These councils specify that all engineering graduates must be competent in both written and spoken communication skills.

Research in the area of workplace communication suggests that it is crucial for professional engineers to demonstrate excellent soft competencies such as effective oral communication skills, an understanding of ethics, teamwork and leadership besides displaying their mastery in technical skills (Rainey, Turner & Dayton, 2005). In fact, according to Grant and Dickson (2006), the World Chemical Engineering Council (WCEC) which surveyed 2158 chemical engineers from 63 countries in 2004 on generic attributes and abilities in relevance to workplace needs found that ability to communicate effectively was ranked third from 26 other listed attributes. The findings illustrate the significance of communication skills as one of the competencies highly needed in the engineering industry. The fact that engineers’ overall work time is spent on some form of communication has strongly proven the needs of this competency in the engineering workplace. The findings were reported by a survey conducted by Sageev and Romanowski (2001) with 1500 engineers who graduated from the School of Engineering and Applied Sciences. They claimed that “technical ideas and results are not useful until and unless they are communicated and discussed” (p.687).

Another research conducted by Lee (2003) in major engineering firms in Malaysia also supported the previous findings. The data from 312 returned questionnaires showed that employers identified communication (such as being able to speak clearly, give clear instructions and make effective presentations) as the most important skill attribute to be possessed by graduating engineers. In the business world, Crosling and Ward (2002, p.47) who surveyed 24 employers of Monash business graduates found that oral communication skills is “one of the most vital components for graduate success in the workplace”. This is because high frequencies of formal and informal forms of oral communication occur at the workplace, ranging from interpersonal communication to work-related communication.

Furthermore, research studies also found that effective oral communication skills in English are important for job recruitment, job success and promotion. The surveyed engineering students in
Venkatraman and Prema’s (2007) study agreed that mastering English can positively influence their education achievement and future career. The significance of English language is also highlighted by workers in the tourism industry in Jordan where it was reported that their job specification requires employees to possess good English language proficiency (Al-Khatib, 2005). However, Patil, Nair and Codner (2008) who identified industry’s perceptions of engineering graduates reported that there was a competency gap between their expectations and graduates’ competencies at the workplace especially in generic professional attributes. They identified the biggest gap was in oral communication skills, followed by interpersonal skills and written communication skills.

Similar findings were found in Malaysia in which Kaur and Kaur (2008) reported a gap between graduates’ perceptions and the employers’ perceptions of the graduates’ communication skills and English proficiency. Results showed that the employers seem to have a higher expectation of these graduates while the graduates were of the opinion that they had reached a satisfactory level of competencies in the above-mentioned skills.

**Role of the English language in Malaysian Workplaces**

In the Malaysian context, even though English is a second language, it is undeniable that it has become the lingua franca of most Malaysian private sector organisations (Shameem Rafik-Galea & Mohd Salleh Hj Hassan, 2003). Research in communication in a workplace also reported that most international and reputed companies have listed excellent communication skills in English as one of the main criteria for recruiting new staff (Megat Johari et al., 2002; Lee, 2003). Consequently, this phenomenon has forced Malaysian graduates, including engineering graduates, to possess certain levels of English language proficiency to ensure better employment prospects.

Notwithstanding such concerns, research studies point out that local engineering graduates exhibit a lower level of communication skills compared to overseas graduates (Lee, 2003). This could well be attributed to their low English language proficiency and perceptions of themselves as competent English communicators. A research study carried out in 2005 by Jobstreet.com, a
Malaysian employment agency, revealed that several factors contributed to unemployment among Malaysian graduates. The study which was conducted among 3300 human resource personnel and employers listed low level of English language proficiency as the main reason for not employing Malaysian graduates in their companies. In other words, most Malaysian employers found the level of English language proficiency among Malaysian graduates to be below their expectation and standard. In a similar study, Norshima Zainal Shah (2006) reported that 40% of Information and Communication Technology (ICT) graduates who responded to the survey agreed that their unemployment was attributed to their low level of English language proficiency. This had caused them to project a low level of confidence in interviews, resulting in failure to secure a job. The fact that effective oral communication skills in English is the most important criteria for recruitment in the IT industry has been highlighted by a study conducted by Kaur and Lee (2003). Further, the IT employers identified presentation, interviewing and conversational skills in English as being vital attributes for IT graduates.

The Concept of Oral Communication Apprehension

McCroskey (1977, p.78) defines communication apprehension as "fear or anxiety with either real or anticipated communication with another person or persons". Research in foreign/second language learning found that learners’ lack of proficiency in the language is the major contributor in their anxiety and apprehension (Horwitz et al., 1986). In fact, they argue that the most threatening aspect of foreign language learning is speaking in the target language. This is supported by data from a research study conducted by Rosnah Mustafa and Siti Norfishah Mohd Zain (2009) with 61 Malaysian ESL learners who enrolled in the English for Specific Purposes 1 (ESP1) course in University Malaysia Sarawak. It was reported that most of the respondents recorded high communication apprehension with a mean score of 74.49. Another research on Malaysian learners was conducted by Devi and Feroz Farah Shahnaz (2008). They conducted a study on communication apprehension and communication competence on ESL electrical engineering students in a public university in Malaysia. The study, which was replicated from Rojo-Laurilla’s (2007) study, yielded similar findings to reveal that the students had moderate communication apprehension levels and moderate communicative competency in all
communication contexts such as public, dyad and groups as well as in communicating with strangers, acquaintances and friends.

In Puerto Rico, a study was conducted by Richmond, McCroskey, McCroskey & Fayer (2008) with Puerto Rican learners of English as a second language. It was discovered that these students were more apprehensive when communicating in English (L2) compared to using their L1 (Spanish). In addition, their self-perceived competence and the level of communication apprehension in L2 was significantly correlated. In a similar study conducted by Young (1990), it was found that students learning Spanish were more apprehensive when they communicate in the second language.

MacIntyre & Noels (1997) reported that individuals who are highly anxious about communicating in the target language perceived themselves to have low L2 communication competence. Similar findings were reported by McIntyre, Baker, Clement and Donovan (2002) which confirm the view that language anxiety affects perception of communication competence. The growing concern about the deterioration of Malaysian engineering graduates’ communication skills in English has prompted the researchers to analyze the issue from the affective and physiological perspective. In fact, Rojo-Laurilla (2007) advocates the need to conduct more research in this area. The findings of the present study will help provide further insights of Malaysian engineering students’ perceptions of their oral communication apprehension level in English as this data may contribute to pedagogical implications especially with regards to ESP course planning in higher institutions of learning in the country.

Methodology
This section explains the participants’ profile, data gathering procedures and the instruments used to collect relevant data.

Profile of Respondents
The respondents were 193 final year engineering students from the Faculty of Chemical and Natural Resources, Universiti Malaysia Pahang. Throughout their years of study in this
university, they have been exposed to the use of English as the medium of instruction in most engineering lectures and they have also enrolled in four levels of English communication course in the first four semesters of their study. After taking English language courses for four consecutive semesters (not including 11 years of learning English as a school subject in primary and secondary schools), these students are expected to possess a respectable level of English language proficiency towards preparation for their job interviews in the near future.

Table 1 presents a breakdown of the respondents based on gender and programme of study. Of the total respondents, 49.0% were male and 51.0% were female.

**Table 1: Number and percentage of respondents based on gender and programme of study**

<table>
<thead>
<tr>
<th>Scale</th>
<th>No. of Respondents (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>69 (49.0%)</td>
</tr>
<tr>
<td>Female</td>
<td>71 (51.0%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>140 (100.0%)</td>
</tr>
<tr>
<td><strong>Programme of study</strong></td>
<td></td>
</tr>
<tr>
<td>BKB (Biotechnology)</td>
<td>53 (38.0%)</td>
</tr>
<tr>
<td>BKC (Chemical)</td>
<td>69 (49.0%)</td>
</tr>
<tr>
<td>BKG (Gas)</td>
<td>18 (13.0%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>140 (100.0%)</td>
</tr>
</tbody>
</table>

**Instruments and Data Collection Procedures**

A set of questionnaires was developed to gauge the engineering students’ level of communication apprehension (CA hereafter) in communicating in English. It consists of two sections. The first section gathered information on the respondents’ demographic profile such as gender and programme of study. The second section contained McCroskey’s (1984) Personal

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Report of Communication Apprehension (PRCA-24 hereafter) which aims to determine students’ level of communication apprehension in various contexts. The questionnaire was distributed to 193 final year engineering students from the Faculty of Chemical and Natural Resources in Universiti Malaysia Pahang. However, only 140 questionnaires were returned with complete answers. Prior to completing the questionnaire, students’ consent forms to participate in this study were obtained and the respondents were assured anonymity and confidentiality of their answers as they were not required to state their names on the survey forms. In addition, they were informed that the data would only be used for research purposes.

The Personal Report of Communication Apprehension (PRCA-24), developed by McCroskey (1984), consists of 24 statements. The PRCA-24 was selected because of its wide use and its effective reliability and validity values (Richmond, McCroskey, McCroskey, & Fayer, 2008; Byrne, Flood, & Shanahan, 2009 & Finn, Sawyer, & Schrod, 2009). Furthermore, an internal reliability of more than 0.90 has been consistently reported (Gardner, Milne, Stringer, & Whiting, 2005; Francis & Miller, 2008, Vevea, Pearson, Child, & Semlak, 2009). This instrument records participants’ feelings for communication in four different contexts: Group Discussion, Meetings, Interpersonal Communication and Public Speaking. The participants rated each statement by using the scale based on the rubrics stated. According to this instrument, scores can range between 24 and 120. Scores of 24 – 55 represent students who have a low level of communication apprehension; scores of 55 – 83 represent people with moderate CA and scores of 83 – 120 represent people who have high levels of CA. To determine the overall CA score, all four subscores are added together.

Findings and Discussion

Table 2 below displays the number and percentage of subjects who were classified as demonstrating high, moderate and low CA which is based on the PRCA-24 questionnaire.

Table 2: Number and percentage of respondents who are classified as high, moderate or low on PRCA total scores
Table 2 shows that almost twice as many respondents reported having low communication apprehension compared to the respondents who perceived themselves as having high communication apprehension. The data also reveal that a majority of the respondents (70.7%) reported moderate communication apprehension.

Subscores for each scale were also analyzed. Table 3 below illustrates the number of respondents who experienced high and low communication apprehension based on the PRCA subscores.

**Table 3**: Number and percentage of respondents who classified as high or low on PRCA subscores

<table>
<thead>
<tr>
<th>Scale</th>
<th>High</th>
<th>Moderate</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRCA subscores</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public speaking</td>
<td>89 (63.5%)</td>
<td>-</td>
<td>51 (36.5%)</td>
</tr>
<tr>
<td>Meetings</td>
<td>52 (37.1%)</td>
<td>-</td>
<td>88 (62.9%)</td>
</tr>
<tr>
<td>Group discussions</td>
<td>43 (30.7%)</td>
<td>-</td>
<td>97 (64.3%)</td>
</tr>
<tr>
<td>Interpersonal conversations</td>
<td>65 (46.4%)</td>
<td>-</td>
<td>75 (53.6%)</td>
</tr>
</tbody>
</table>

The findings show that the Public Speaking subscore data revealed high communication apprehension for a majority of respondents (63.5%). Meetings and Group Discussions subscore data revealed that most respondents experienced low communication apprehension in both communication contexts (62.9% and 64.3% respectively). Interpersonal Conversations subscore
data indicated that 65 and 75 students respectively had high and low levels of communication apprehension.

Vest et al.’s (1996, p.39) study reported that the most of the engineers surveyed rated their preparation in presentation skills as “poor” because only one third of them reported having taken public speaking courses during their university years. This may also account for the high apprehension experienced by most of the engineering students in this study as only one third of these students had enrolled in a public speaking course in the university.

**Implications of findings**

The implications identified from these findings point to the fact that educators need to be aware of certain skill-deficit issues, so as to prepare the graduates for the engineering workforce. Research on workplace communication have identified that graduates must possess effective communication skills as it is one the main criteria emphasised before joining the workplace (job recruitment) and while working with the company (job promotion). Many companies prefer to have new recruits with effective communication abilities as they can be effectively trained by the companies. In the context of international engineering companies operating in Malaysia, hiring employees who are proficient in both English and Malay (Malaysia’s national language) will benefit both the companies and new employees.

A stronger emphasis on communication abilities while still attending university is also recommended as part of university’s responsibility in preparing students for the workplace. Engineering students must spend more time on formal oral communications in English for them to enhance their mastery in the target language. Findings in this study reported that public speaking or giving formal oral presentations caused high apprehension among majority of the engineering students. Therefore, the content of incorporating a communication curriculum should not only include, but also stress on oral presentations. Opportunities to practice giving presentations inside and outside the classrooms are crucial for their future employment success. In addition, students need to practice receiving more feedback from their course instructors. In other words, formal instructions and experience in formal presentations would undoubtedly
benefit the students. After all, these skills are important as engineers’ job specifications require engineers to communicate their ideas clearly to clients, colleagues and management.

Conclusion

This study revealed the levels of oral communication apprehension in English among chemical engineering students. Apparently, communication apprehension is present among these students but only at a moderate level. These findings are similar to other research studies conducted by Devi and Feroz Farah Shahnaz (2008) and Rojo-Laurilla (2007). Rojo-Laurilla (2007) posited that these kinds of results are yielded due to students’ positive attitudes towards learning English. In addition, the amount of exposure to the target language could also have affected students’ perceptions of their oral communication apprehension in English language. For further understanding of the issue of communication apprehension among ESP learners, especially among engineering students, it is recommended that future research investigate the sources that generate apprehension among students when they communicate ideas in English. Furthermore, detailed information on reasons for students’ apprehension in certain communicative events such as public speaking or oral presentations will better illuminate the actual state of analysing communication apprehension among engineering students. In addition, curriculum developers and syllabus designers must take into consideration the issue of workplace needs for excellence in communication in improving the quality of our engineering graduates and hence preparing them to be global players in their professional environment.

References


