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Evaluating The Workplace Communication Needs Of Aircraft Maintenance Engineering Students At A Malaysian Polytechnic

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ABSTRACT

English language educators in the Malaysian polytechnics are required to prepare engineering undergraduates with adequate English communication skills in order for them to function effectively at their future workplaces in the aviation industry. This paper analyses the workplace communication needs of Aircraft Maintenance engineering students at a Malaysian polytechnic. The paper aims to provide a detailed understanding of the communication requirements in the workplace in order to develop appropriate teaching and learning materials and courses based on their needs. Data were collected using a needs analysis questionnaire from 75 aircraft maintenance students who are currently undergoing their industrial training in the aviation industry. The selection of students undertaking industrial training experience would be apt in terms of providing feedback on workplace communication skills required by the industry. The results of the study revealed that polytechnic aircraft maintenance engineering students' reported that they are still not proficient in certain oral and written communication skills and giving oral presentation skills. Therefore, any teaching and learning materials or courses to enhance aircraft maintenance engineering students' workplace communication skills could be developed by focusing on these skills.

Key Words: workplace communication skills, needs analysis, aviation industry

1.0   INTRODUCTION

In Malaysia, educating and producing quality graduates as human resources is an important element to achieve the status of technologically advanced nation as enshrined in the Vision 2020 policy. Higher education institutions are deemed to be crucial agents responsible for the creation and dissemination of knowledge whilst being the centre of science, scholarship and the new knowledge economies (Knight, 2013). Besides, there are tremendous expectations for higher education institutions to produce highly skilled and knowledgeable graduates with communicative, creative and critical abilities to meet the demands of current workplace settings. Fundamental to these expectations is the extensive use of the English language as the main medium of communication (Tajuddin & Jauhar, 2015). The needs to display these language skills are tantamount to the success of the execution of workplace events and tasks by engineers in their daily routines

The teaching of English in higher education institutions in Malaysia mostly endeavors to prepare students for workplace communication. However, it is viewed problematic when graduates are not employed due to not having skills to communicate effectively in English. Rahmah et al. (2011) mentioned that one of the factors that contribute to the unemployment problem among the Malaysian graduates is the quality of the graduates. The skills include technical skills, problem-solving skills and communication skills, especially in English language (ibid). According to the United Nations Educational, Scientific, and Cultural Organization (UNESCO) report on Employability of graduates in Malaysia (2012), graduates from the engineering, sciences and information and communication technology (ICT) were the most sought after graduates due to the proliferation of these industries both in Malaysia and globally. However, many employers were hesitant to hire these graduates due to their poor proficiency in the language, although they were highly qualified academically (Bodnar and Clark, 2017).

Specifically, the competencies required for potential engineering graduates has changed from those required of years back. In the 21st century workplace, future engineers are not only required to possess technical knowledge but also relevant soft skills for effective workplace communication purposes (Moslehifar and Ibrahim, 2012). Previous studies carried out in Malaysia has emphasised the importance of communication skills needed for Malaysian engineering graduates (Kassim and Ali, 2010; Bhattacharyya, Nordin & Salleh, 2009; Radzuan and Kaur, 2016) and these findings solidify the importance of workplace communication skills among engineering graduates, especially in the Malaysian technical job market. However, these studies have also indicated that engineering graduates lack these skills and their communication skills contradicts with the expectation of the engineering employers.

The issue of poor communication skills among engineering graduates has been linked to inadequacy of English language courses and poor preparation of engineering graduates for the workplace (Bhattacharyya, Nordin and Salleh, 2009). According to Groccia and Buskist (2011) what is delivered inside world's higher education classrooms leaves an intense impact on not only students' grades but also towards the global economic, social success and international survival. Abdullah and Majid (2013) further assert that the real challenge in producing proficient graduates is unspokenly shouldered by the English language lecturers. CanagaRajah (2007) recommends that the teaching of English should undergo changes in pedagogy by focusing more on effective communicative strategies. Thus, it is paramount for English language educators to use the most effective teaching and learning approaches in higher education institutions to prepare students for the emerging new world reality.

2.0 PROBLEM STATEMENT

The lack of communication skills among engineering students has been widely reported in the literature for many years. Despite the widespread highlighting, continual emphasis and reports has been published regarding the divide between the communication abilities of engineering graduates produced by higher learning institutions and the industry's needs of engineering graduates' communication skills and abilities. Without a clear understanding of the workplace communication needs of the industry, specifically of the aviation industry, it is questionable whether the polytechnic Communicative English courses might be able to cater to the communication skills required by the industry. In addition, a previous study carried in the polytechnic context by Sanmugam (2013) found that the vast majority of polytechnic engineering students undergoing industrial training found that the materials in the English Language course book are irrelevant to their engineering field since the same course book is used across all departments and field of studies. Students may need different communicative skills depending on their disciplines of study and the types of workplace they intend to work. This notion has been stressed by Lehtonen and Karjailainen (2008) who highlight that literature on Language for Specific Purposes (LSP) and English for Specific Purposes (ESP) has shown that an individual who works in different contexts needs different types of language use. Thus it is important to identify the needs of the learners as well as the industry on an ongoing basis because they are likely to change over time, depending on contextual and human affective variables (Hutchinson and Waters, 1987).

3.0 RESEARCH QUESTIONS

This study focuses on examining workplace communication needs of aircraft maintenance engineering students who are undergoing their internship at aviation industry. Therefore, the study addresses the following research questions:

i.   How important are the workplace communication skills to polytechnic aircraft maintenance engineering students?

ii.   How polytechnic aircraft maintenance engineering students' self-rated their workplace communication skills?

iii. What are the polytechnic aircraft maintenance engineering students' perceptions towards the Communicative English courses offered at polytechnic?

4.0   METHODOLOGY

The main data collection methods for needs analysis are questionnaires and interviews (Dudley-Evans & Jo St John, 2009). This study utilised both these methods. The questionnaire was adapted from studies carried out by Al Tamimi & Shuib (2010) and Kassim and Ali (2010). An online survey using Google Docs was used to examine aircraft maintenance engineering students' workplace communication needs. The link of the online survey was sent by WhatsApp to three classes of final semester aircraft engineering students undergoing industrial training at various aircraft service industries in Malaysia. A smaller number of participants (8) were interviewed for cross-validation purposes.

The rationale of selecting final semester aircraft maintenance engineering students who are undergoing industrial training was that these students have also completed all three levels of Communicative English courses. Therefore, they were able to provide feedback on which aspects of English language they perceive is needed while participating in their industrial training. A total of 75 final semester aircraft maintenance engineering students responded to the survey. The data collected from the questionnaire were then analysed descriptively for frequencies and percentage scores while the interview data were used to support the quantitative data.

5.0   RESULTS AND DISCUSSION

This section comprises three parts. The first part deals with the importance of workplace communication skills while the second part presents data related to polytechnic aircraft maintenance engineering students' self-rating in terms of their workplace communication skills. The last part illustrates data pertaining to polytechnic aircraft maintenance engineering students' perception towards Communicative English courses.

5.1 Importance of Workplace Communication Skills

This sub-section highlights the results regarding the importance of the 12 workplace communication sub-skills perceived by polytechnic aircraft maintenance engineering students'. Likert scale rating (1 implies "Very Important", 2 "Somewhat Important" and 3 "Not Important") was used to rate participants' views. Table 1 summarizes the descriptive statistics of the results.

Table 1: Importance of Workplace Communication Skills

Questionnaire Item	CHOICES / PERCENTAGE					
	Very Important		Somewhat Important		Not Important	
	(n=75)	%	(n=75)	%	(n=75)	%
Teleconferencing	58	77.5	15	20	2	2.5
Discussing work related matters informally	45	60	26	35	4	5
Discussing work related matters formally	47	63	22	29	6	8
Conversing informally and socially	45	60	26	35	4	5
Giving oral presentations	63	84	7	9.5	5	6.5
Resolving conflict	48	64	24	32	3	4
Building relationships	47	63	22	29	6	8
Working in a team	61	82	11	15	3	4

Presenting new ideas/alternative strategies	59	**78.5**	13	**17.5**	3	**4**
Instructing, explaining, negotiating and demonstrating	60	**80**	11	**15**	4	**5**
Handling external correspondence – emails, letters, memo	48	**64**	24	**32**	3	**4**
Writing reports and proposals	59	**78.5**	13	**17.5**	3	**4**

Table 1 show that the polytechnic aircraft engineering students rated all the communication skills as "very important". Among these skills the importance of giving oral presentations (84%), working in a team (82%), instructing, explaining, negotiating and demonstrating (80%), presenting new ideas/alternative strategies and writing reports and proposals (78.5%) and teleconferencing (77.5%) were rated very highly as the "very important" workplace communication skills.

Furthermore, in the interviews, students' responses consolidated with the survey findings. They expressed that all workplace communication skills are important. However, during the interview session some students mentioned that Communicative English courses at polytechnic should give equal importance to written communication components. The following are some of the related feedback provided by the students:

"Most of the time we are required to do presentations. Not much of writing tasks are provided" (S5).

"I don't remember doing much writing tasks at poly but now I have to write a lot of reports and submit to my supervisor" (S6).

The results show that all the skills related to both internal and external communication skills listed in Table 1 are important. Nevertheless, equivalent emphasis should be given for written communication skills to ensure students can perform effectively at their future workplace settings.

5.2 Self-Rating of Workplace Communication Skills

This section reports polytechnic aircraft maintenance engineering students' self-rating of their ability related to the workplace communication skills. To evaluate their ability in performing the 12 workplace communication skills, a rating scale (1 means "Efficient", 2 "Somewhat Efficient" and 3 "Not Efficient") was used.

Table 2: Self-rating of Workplace Communication Skills

Questionnaire Item	*CHOICES / PERCENTAGE*					
	Efficient		*Somewhat Efficient*		*Not efficient*	
	(n=75)	*%*	*(n=75)*	*%*	*(n=75)*	*%*
Teleconferencing	11	**15**	40	**53**	24	**32**
Discussing work related matters informally	48	**64**	18	**24**	9	**12**
Discussing work related matters formally	26	**34.5**	36	**48**	13	**17.5**
Conversing informally and socially	45	**60**	26	**35**	4	**5**
Giving oral presentations	12	**16**	23	**31**	40	**53**
Resolving conflict	10	**13**	42	**56**	23	**31**
Building relationships	45	**60**	26	**35**	4	**5**
Working in a team	58	**77.5**	15	**20**	2	**2.5**
Presenting new ideas/alternative strategies	13	**17.5**	48	**64**	14	**18.5**
Instructing, explaining, negotiating and demonstrating	11	**15**	22	**29**	42	**56**

Handling external written correspondence – emails, letters, memo	12	**16**	18	**24**	45	**60**
Writing reports and proposals	10	**13**	18	**24**	47	**63**

Table 2 illustrates the self-ratings of participants' ability in performing the workplace communication skills. Among the 12 skills listed in Table 2, the majority of the participants' rated that they are efficient in working in a team (77.5%), discussing work related matters informally (64%), conversing informally, socially and building relationships (60%). This implies that most of these students are comfortable in communicating in informal contexts rather than in formal situations at workplace. This is not surprising since most of the tasks or assessments carried out during their Communicative English courses at polytechnics are collaborative in nature.

However, it is important to note that more than half of the participants' rated that they are not efficient in terms of writing reports and proposals (63%), handling external written correspondence (60%), instructing, explaining, negotiating and demonstrating (56%) and giving oral presentations (53%). The following are some of the related feedbacks provided by participants' during the interview session:

"I find it difficult to write good reports. I need to improve my technical report writing skills"
 (S3).

"Although we are used to oral presentations at polytechnic, I am still not confident and become nervous when I have to present in front of others" (S5)

"I am not good in oral presentations. I am scared that other's will laugh at me" (S7).

Based on the analysis of both survey and interview data, it is quite apparent that most participants are still lacking essential communicative skills such as giving oral presentations and written communication skills which are frequently used at the workplace. Therefore, in developing teaching and learning materials, more focus should be given to improve these skills and to ensure that students are more prepared to perform the communicative events at their future workplace contexts.

5.3 Perceptions towards Communicative English courses

This section presents polytechnic aircraft engineering students' perceptions regarding the Communicative English course. The four main aspects on perceptions that have been explored are mainly the usefulness and course preferences.

Table 3: Usefulness of Communicative English course

Questionnaire Item	Choices	Total (n=75)	Percentage (%)
How useful is the Communicative English Course learned at Polytechnic with regard to your workplace communication needs?	Very Useful	45	**60**
	Quite Useful	26	**35**
	Not Useful	4	**5**

The results in Table 3 revealed that around 60% of the participant's reported that the Communicative English courses offered at polytechnic are very useful in terms of meeting their workplace communication needs while around 35% found the Communicative English course quite useful. Despite the majority of participants' perceived usefulness, during the interview a number of students' reported a discrepancy between what they learn in the Communicative English classroom and what

is actually required in the actual workplace. The following are some of the feedback provided by the students:

"Although Communicative English courses were useful to build our communication skills generally, learning specific workplace communicative English required for aviation industry would have been better for us to understand and apply it in future" (S2).

Another student gave similar response:

"What we learnt at poly was quite general. Presentations and discussions were done with classmates. In the real workplace we need to communicate, listen and deal with people in the real aircraft/aviation industry" (S7).

In line with interview data provided, the results pertaining polytechnic aircraft maintenance students' preferred English language course illustrated in Table 4 below shows that the majority of the students' prefer learning English for Aircraft Maintenance (77.5%). It can be implied that participant's would like to study specific English language course that would prepare them to communicate and function effectively at their workplace in the future.

Table 4: Course preference

Questionnaire Item	Choices	Total (n=75)	Percentage (%)
What type of English Language Course would you prefer to study?	Communicative English	15	20
	English for Aircraft Maintenance	58	77.5
	General English	2	2.5

Thus, it is essential for course developers and English language lecturers to identify students' workplace communication needs in order to prepare them for the actual workplace context. In order to identify these skills, English language lecturers could work collaboratively with the Aircraft Maintenance Department lecturers and the student alumni in terms of identifying, analysing and understanding aircraft maintenance engineering students' professional communication needs. These would help English language lecturers to identify and address the required communication skills required of the aviation industry.

6.0   CONCLUSION

This study examined the workplace communication needs of 75 aircraft maintenance engineering students who are currently undergoing their industrial training at various aviation workplace contexts. Participants were asked to rate the importance and self-rate their abilities related to the workplace communication skills. Additionally, the study also explored the student's perceptions towards the Communicative English courses in terms of usefulness and preferences.

The analysis of the results indicated that the majority of the participant's agreed that all the workplace communication skills are very important at the workplace. However, when they were required to self-rate their abilities pertaining to those skills, it was found that more than half of the responded agreed that they are not efficient in terms of written communication skills, oral communication skills such as instructing, explaining, negotiating, demonstrating and giving oral presentations. English language lecturers' could use these results to prioritise and align their pedagogical practices in order to enhance students' workplace communication skills.

Concerning polytechnic aircraft maintenance engineering student's views towards the Communicative English course, majority of them reported that they found the course very useful. Yet, during the interview session, some students reported that there is a gap between what they learned in the Communicative English classroom and what is actually required in the actual workplace context. In the actual workplace context they need to communicate in specific, authentic aircraft maintenance/aviation settings while what they acquired studying Communicative English at polytechnic was quite general. The choice of English course that they have selected corresponded with the interview results whereby majority of them stated they prefer to study English for Aircraft maintenance as compared to Communicative English or General English courses.

There are some limitations in the current study. Although combination of both survey and interview data collection approaches were adopted the results would have been more convincing if participants' observations in real workplace settings would have been carried out. Besides, exploring feedbacks from other stakeholders such as English language lecturers, Aircraft maintenance department lecturers and members of the industry would provide a more conclusive data pertaining to polytechnic aircraft maintenance engineering students' workplace communication needs.

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