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Technical Oral Presentation Delivery: Qualitative Analysis of Engineering Undergraduates' Impediments to Effective Oral Presentations in an Engineering Context

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Abstract

Engineering undergraduates are expected to deliver technical oral presentations on various occasions particularly in university subjects. Engineering undergraduates struggle when they are assigned to deliver technical oral presentations and often they have impediments to deliver oral presentations at tertiary level. The paper reveals prime findings on the technical oral presentation's impediments faced by the engineering undergraduates in delivering effective presentations. A semi-structured interview was conducted by 12 engineering undergraduates from various engineering faculties in Universiti Malaysia Pahang, Malaysia. Findings of the study revealed that the engineering undergraduates encountered impediments such as when delivering technical oral presentations particularly in terms of presentation skills as well as English as a medium of instruction. In this study, the researchers provided, therefore, suggestions on how to improve the engineering undergraduates' technical oral presentation skills.

Keywords—*Technical oral presentation; impediments; engineering undergraduates.*

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1. Introduction

Engineering educators and researchers have lately been preoccupied trying to highlight the role of technical oral presentation in technology and engineering context of undergraduates, particularly at undergraduate levels (Benraghda, Ali & Radzuan, 2015; 2018; Liow, 2008; Munby, 2011; Wolf, 2008). Most of those studies were embarked to ways of conducting appropriate oral presentations (Abdu El Enein, 2011). Possessing effective oral presentation skills have been argued to be of advantage for individuals in both academic and professional settings (Chan, 2011). In academic context for instance, students are required to communicate technical concepts and different ideas through formal oral presentation (Tenopir & King, 2004). Engineering students are expected to be competent in spoken communications (Subramanian & Harun, 2013).

Al-nouh, Abdul-kareem and Taqi (2015) investigated the EFL college students' difficulties in delivering technical oral presentation. The participants of the study were from different grade levels enrolled in a programme of four-year pre-service teacher education at the college of Basic Education (CBE) in Kuwait. The researchers focused on the problems of university and college Arab students in general face communication, specifically in oral presentation. Al-nouh, Abdul-kareem and Taqi (2015) found that students experienced difficulties with their oral presentation in English. Also, students of CBE still experienced a number of difficulties which were basically related to fear of negative evaluation and forgetting what they wanted to say. This study, basically revealed very significant result, that is to say, students acknowledged other factors which contributed to experience difficulties in delivering oral presentation such as technology-based equipment, lack of oral presentation courses, ample time allotted for oral presentation, and a suitable environment. Additionally, the study of Al-nouh, Abdul-kareem and Taqi (2015) indicated that the need for teachers to provide a more appropriate environment, including support and encouragement which may produce a greater comprehension and lower stuidents' anxiety and motivate them towards delivering oral presentations. More conversation courses are needed, along with language labs for students to help students to develop their oral skills as well as to conduct their oral presentations effectively.

Kassim and Ali (2010) conducted their study about the feedback from engineering industry in order to investigate the communicative skills at the workplace required by the industry. The findings of this study revealed that special importance should be put on oral communication rather than written communication skills. Besides, fluency in the English language was viewed as an opportunity in the field of engineering in becoming a global engineer. Furthermore, Kassim and Ali's results (2010) indicated that the communicative events considered essential for engineers are: networking, teleconferencing for advice and contacts, and presenting various ideas.

Hussain, Shahid and Zaman (2011) examined the students' foreign language anxiety. They posited that learners feel anxious because of lack of self-confidence in English language class. Also, test anxiety in an English language class was almost experienced by students, owing to inability to perform better in technical oral test. Hsieh's (2014) study was conducted to investigate how target language proficiency and cultural background affect L2. The researcher found, in terms of language proficiency, that learners of lower proficiency level tended to use more avoidance strategies and they focused on what they only had known in addition, learners derived from various cultural groups used oral communication strategies

in significant and different ways as their language proficiency increased. The study of Hsieh (2014) has made an important contribution to re-developing oral communication strategy in Chinese foreign language context.

Radzuan and Kaur (2011) investigated anxiety in technical oral presentation of engineering undergraduate students. The researchers pointed out that the main sources of technical oral presentation apprehension which was experienced by local undergraduate engineering students in technical oral presentation in one of the public universities in Malaysia, in delivering their technical presentations, are due to provoking and demanding evaluation panels, restricted technical knowledge of undergraduate engineering students. That is to say, local students experienced different factors that determined their attitude to deliver technical oral presentation.

Al-mahrooqi (2012) identified in her research paper how technical communication skills are taught from a student perspective in higher education institutions and Oman's schools. The researcher used written protocols as qualitative approach from 58 respondents. This research embarks on an investigation and examines students' definitions of communication skills, viewpoints about the communication skills' importance, and how students are taught in schools and institutions of higher education. The results of this study revealed that communication skills are not effectively addressed in Omani educational schools. Students learned them only from many various ways like personal interactions with friends and family members in and outside school. In addition to that, most of the students were very poor at technical communication skills and anxious to communicate in English. Al-mahrooqi (2012) recommended teachers to deal with communication skills explicitly inside the classroom. The objective of the present study is to explore the students' impediments in delivering technical oral presentations.

2. TECHNICAL ORAL PRESENTATION

In this study, Technical oral presentation refers to Assessment 2 or Mini Project Presentation in English for Professional Communication (UHL 2432). UHL2423 is the code for the mandatory course English for Professional Communication for the undergraduates at Universiti Malaysia Pahang (UMP). The undergraduates' scores of their Technical oral presentations are based on this assessment. The overall student' score is 60 marks. It is 20% from the total assessment's mark for the course. The description of Mini Project presentation's evaluation in English for Professional Communication is divided into three parts: 1) 'Content' that constitutes 16 marks, 2) 'Language' which contains 30 marks and 3) 'Delivery' that contains 14 marks as it is demonstrated in Table 1 in percentage.

TABLE 1. Technical Oral Presentation (T. O. P.)

M.P.P.	Descriptors	Percentage %
Assessment 1	Content	24.4 %
Assessment 2	Language	50 %
Assessment 3	Delivery	25.6 %
-	Total	100 %

Note: M.P.P.: Mini Project Presentation

The mark for content is restricted on the topic of the presenter i.e., the mark (24.4%) is about introducing the topic, the body and closing their topics and also the way the student gives a suitable combination between the three steps to make the topic united and successfully presented. The mark for language is the highest mark in this assessment (50%). It focuses on a few points such as choosing appropriate and clear words that fit the context of the topic, accuracy and fluency, ability to effectively communicate meaning, correct language (grammar), cohesion and coherence. The mark for delivery (25.6%) highlights on the intonation of presenter's voice, visual aid, slides and graphics, eye contact, speech and adhering to time limit.

3. METHODOLOGY

3.1 Participants

The participants of the study are the engineering undergraduates who take English for professional communication at Universiti Malaysia Pahang (UMP). The overall number is 636 undergraduates who registered in English for Professional Communication. (UHL2432) in Semester I 2015/2016. The total number of the undergraduates is obtained from the Centre for Modern Languages and Human Sciences (CMLHS) of Universiti Malaysia Pahang (UMP). The respondents consist of male and female undergraduates, studying in engineering faculties in the university. In the current study, 12 students were interviewed. Such number was obtained after it reached a saturation point where no new information was emerged after conducting the interview.

3.2 Instrument

A semi-structured interview was run to examine the students' perspectives to further find out the impediments of the respondents in delivering technical oral presentations. The interview was conducted after all of them delivered their technical oral presentations in the classroom. The interview protocol was developed by the researchers. It consists of five open ended questions (Please refer to Appendix A.).
The respondents were interviewed based on nonprobability sampling. Creswell (2012) posited that in nonprobability sampling, the researcher may select individuals because they are convenient. The researcher may need, in some situation, to involve participants who agree to volunteer for the study.

3.3. Data Analysis Technique

Qualitative data analysis in this study is the analysis of diverse data such as from narrative data. Teddlie and Tashakkori (2009) posited that these narrative data are normally equipped for analysis by changing raw data into partly processed data, which are then exposed to particular analysis system. The researchers, in qualitative approach first, collect data and then prepare it for data analysis (Creswell, 2012).
According to Creswell (2012), a researcher needs to proceed with the commonly steps used in analysing qualitative data. These steps represent organizing and preparing the data for

analysis; engaging in a first exploration of data through the process of coding it; employing codes for developing a more general or overall picture of the themes and data descriptions; representing the results through visuals and narratives; making interpretations of the meaning of the findings.

The following five steps were used to analyse the interview of the current study. Firstly, the researchers began with the process of analysing qualitative data that was inductive in form, going from the detailed data to the general themes and codes. Secondly, in qualitative research, the data collection and analysis were simultaneous activities that is to say, a simultaneous process was conducted to analyse data and also to collect data. When the researchers were collecting data, analysis of other information previously collected was observed so as to look for main ideas. Thirdly, the researcher may collect stories from individuals and return for more information to fill in gaps in their stories as the researchers analyse of their stories proceeds. Fourthly, the researchers analysed their data by listening to it attentively many times and conducting analysis each time they listened to their data base, they developed a deeper understanding about the information supplied by their respondents. It was an eclectic process. Ultimately, qualitative research was considered as "interpretive" research, in which the researcher made personal assessments as to a description that fitted the themes which captured the main categories of information. The interpretation that the researchers made of a transcript, for instance, differed from the interpretation that was made by another researcher. This does not necessary mean that the researchers' interpretation is more accurate or better accurate; simply, it means that the researchers bring their own perspective to their interpretation (Creswell, 2012).

3.4   Semi-Structured Interview

The aim of conducting the interviews is to provide in-depth explanation of data for the purpose of identifying the second language undergraduates' impediments in performing oral presentation. The issue of delivering technical oral presentation and the undergraduates' impediments in delivering technical oral presentation is the core of the interviews. The interview took 15 minutes with each interviewee. All interviews were recorded. In conducting the interview, the respondents were asked to mention their personal information such as names and ages. However, to ensure a systematic description of the data and analysis of the interviews data more systematic, the participants in the semi-structured interview were coded as it is illustrated in Table 2. For instance, M 2 indicates a male respondent whose interview code is 02. Also, F10 refers to a female respondent whose interview number is 10. The interviews' responses or the contents were classified and analysed based on the themes of the respondents' answers.

TABLE 2: The Respondents' Codes of the Qualitative Study

Gender	Code	Interview number
Male	(M)	3
Female	(F)	9
Total	/	12

4.   FINDINGS AND DISCUSSION

These themes are: 1) Undergraduates' anxiety leads to low technical oral presentation performance, 2) Lack of vocabulary, 3) Lack of training before the actual presentation, 4) Lack of instructors' feedback in assessing undergraduates' technical oral presentation. It is described as follows:

4.1   Undergraduates' anxiety leads to low technical oral presentation performance

Engineering undergraduates' anxiety is the impression that is stated initially as a psychological state that impedes them to deliver oral presentation. It is revealed by the majority of the interviewees. For example a female respondent was asked about her sentiment in performing technical oral presentation. She reported "*I am an introvert person so I am very scared of talking in front of people*" (F/6). Similarly, other respondents expressed their sentiments as follows:

> *"Honestly, performing technical oral presentation is very hard for me. I become so nervous and shy." (M/1)*

> "*I easily get nervous I am assigned to perform technical oral presentation. I cannot easily control my feelings while I am presenting in classroom." (F/7)*
> *"I get very nervous when I deliver oral presentation. I try sometimes to remember but I cannot (F/10).*

> *"Usually, I feel so nervous particularly if I do not practice very well. So I will be very anxious. I am afraid of my instructors' questions." (F/8).*

Oral presentation anxiety is related to the undergraduates' oral presentation in classroom. It is one of the main barriers that impede engineering undergraduates to deliver oral presentation. Based on the data, the undergraduates revealed that overcoming anxiety is always the problem that they wish to overcome in delivering technical oral presentation. Most of them are anxious in conveying their ideas in oral presentation inside the classroom.

4.2.   Lack of technical vocabulary

In this section, the participants reported that vocabulary is considered as a major impediment in language for students to involve in delivering technical oral presentation in classroom. The interviewees stated that lack of using correct words and terms in right contexts. They cannot deliver meaningful ideas, expressions and thoughts because of their vocabulary. For instance a male interviewee (M/4) said "When it comes to present orally, English is one of my problem in oral presentation. I sometimes do not know what I say and how to express my ideas and I am not so sure whether it is correct or not" (M/4). Another male respondent said "English is not spoken everywhere in Malaysia. I usually speak in Bahasa Melayu. It is much better to speak in Bahasa Melayu rather than English. My problem of English comes from schooling time such as middle school and high school. Additionally, I do not have a

huge background which means that if I have limited vocabulary about a given topic I become more uncomfortable due to restricted vocabulary I have"(M/2). Furthermore, other respondents reported about vocabulary as follows:

> *"Sometimes I want to express something in my presentation but I find difficulties on how to express it to my classmates. It is because of my past experience in speaking in English. I used to get C. I have never got A. Also, I speak Chinese outsaid the classroom with my friends."(F/8)*

> *"I cannot come up with what I want to say in my presentation. For instance, I would express an idea but I do not have the exact words that I need to do. My problem is that I use informal English so when it comes to formal I cannot. To express my thought is not easy for me" (F/9).*

From the findings, it showed that respondents believed that English is one of the impediments in delivering effective oral presentation in classroom. Data revealed from the interviews that Engineering undergraduates found it is difficulty in conveying their ideas and topics' contents to the classmates and their lecture using the medium. Most of the respondents sufferred from grammar rules, particularly tenses and language structure. Some found that they were less fluent in the language due to their limited vocabulary. Therefore, delivering orally in English has impeded them to give an effective and successful oral presentation.

4.3.   Lack of training before the actual presentation

Majority of respondents stated that lack of training before actual presentation was a barrier to them. All of them agreed that they have less practice and training concerning delivering oral presentation and the oral presentation skills that should be acquired by the engineering undergraduates to improve their technical oral presentation. Three respondents expressed the following attitudes:

> *"Teacher generally shows us how to present in English but not how to present perfectly. Teacher shows us various videos pertaining performing oral presentation. What you see in these videos, you learn by yourself and try at your home. It is difficult for me. I think a lecturer should explain to us how to use body language as one of the main parts in delivering oral presentation such as gestures, eye contact and how to use eye contact to your audience, how to speak loudly. If my voice is very low so how to handle it, how to use the microphone. We cannot ask the video these questions that we come across."(M/2).*

> *"I think that teachers have to give us more training courses regarding oral presentation skills in English and the appropriate way to be professional in technical oral presentation"(M/1).*

"Whenever I present I have a habit of organizing my "tudung" means veil and moving too much. I lose control of myself, so I disturb people who see me. I have no experience of doing technical oral presentation. I do know what is the correct way to present in classroom, perhaps I am not trained enough to be a good presenter"(F/12).

It is not surprising that the respondents of the semi-structured interview mentioned lack of oral presentation particularly the use of body language as an important factor contributing to their performing technical oral presentation. The respondents revealed that the oral skills and training are not acquired in classroom. Additionally, they still look for many ways to overcome this impediment so as to be professional presenters in tertiary contexts.

4.4 Lack of instructors' feedback in assessing engineering undergraduates' technical oral presentations

Lack of instructors' feedback is one of the factors that contribute to the undergraduates' oral presentation performances. Engineering undergraduates overall reported that presenting in front of their teachers is a problem for them. The respondents mentioned that teachers seldom give comments to their presentation, evaluations pertaining to their presentations. These obstacles are explained in much detail in the following excerpts.

F 7: Teacher does not help me really to be a better presenter. They just give us marks of our oral presentation. Teacher may give us few comments randomly and generally. Lecturers should acknowledge us our mistakes that is done during students' oral presentation immediately and give feedback to a student directly and not the marks only.

F6: Based on my past experience, teacher did not care about my oral presentation.

F12: My teacher gives us many tips about how to present but no example of how we should present to be a good presenter. Tips are not good enough because we learn when we see. For me, I see very little feedback of my teacher in my oral presentation. No real feedback in which I can improve my oral presentation skills. Lectures should guide us. What is the purpose of teachers if they do not teach us?

F8: Lecture' feedback, for me, is my problem when I present in English. Looking at me in a serious way I get scared and I lose control of my ideas.

From the respondents' responses, language teachers should be attentive to the undergraduates in performing oral presentation in terms of evaluating students and giving them feedback of their presentations. The data revealed that their teachers' feedback is so important for the undergraduates to receive in order to evaluate themselves and to realize their weaknesses in technical oral presentation delivery. Language teachers' feedback is not only students' marks but also guidance and evaluation to the students to work through it.

The study found that the feeling of anxiety is one of the factors that caused engineering undergraduates to feel uncomfortable when they were tasked to present in class. The finding

of this study is similar to Radzuan and Kaur's (2011) study; they found that most of the students were anxious over delivering technical oral presentations. Similarly, a study conducted among college students found that the students were anxious over delivering presentations (Al-nouh, et al., 2015). The feeling of anxiety was due to the lack of oral presentation courses in the students' classes, particularly when the students were assigned to deliver oral presentations. Also, students of College of Basic Education still experienced anxiety as an impediment which basically hampered them from being involved in oral presentation assignments in the classroom. Training to deliver oral presentations in the classroom is very important to the students (Subramanian, and Harun, 2013). It was pointed out that the students experienced difficulty in delivering oral presentations due to having less training when they were assigned to do the task. In addition, college students in Kuwait have experienced difficulties in delivering technical oral presentations in the classroom. It is because practical training and oral presentation courses were not available for the Arab students to develop their oral skills in delivering technical oral presentations (Al-nouh et al., 2015).

The role played by teachers is very essential when assigning students to deliver oral presentations. The engineering undergraduates pointed out that the teachers' evaluations to improve on their oral presentation skills were not presented in the classroom after they had delivered oral presentations. The engineering undergraduates further argued that their improvement in acquiring oral skills is determined by their teachers' feedback (Ramírez, 2010). The teachers' feedback is needed by the students to improve their oral skills when they are asked to do the task in English in the classroom. This particular finding corroborated with Rasmodjo (2011) who noted that the co-operation from teachers is highly needed and useful in assessing the students' oral presentations. Furthermore, it was found in his study that students realised that feedback is needed to develop their oral skills when they were required to present in tertiary engineering spheres.

6   Conclusion

The researchers, in semi- structured interview, embarked on numerous impediments that engineering undergraduates who participated suffered when they were assigned to deliver technical oral presentation. The undergraduates' impediments that were faced by them are: Technical oral presentation anxiety leads to low oral presentation, lack of technical vocabulary, lack of engineering undergraduates' training before actual presentation and lack of teachers' feedback in assessing engineering undergraduates' technical oral presentation. Engineering teachers should be conscious about the factors that lead engineering undergraduates to possess negative attitude in performing technical ideas in the classrooms (Bougandoura, 2013; Mushtaq, 2014; Mushtaq & Benraghda, 2018; Rafek, Ramli, Iksan, Harith, Abas, 2014). Vahid and Kashani (2011) pointed out that it is very essential for instructors to acknowledge the existence of negative attitudes among the engineering students and take a real initiative for dealing with the engineering and technology students' sentiments towards oral performances in the classroom. Moreover, engineering and technology teachers are promoted to create a friendly and warm environment and give positive encouragements to the students. In addition, they can take measures to reduce the

sense of negative sentiments (anxiousness) among the students, and replace it with friendly cooperation. Competent teachers at a tertiary level may put extra efforts by developing course outlines with interesting oral activities which may enhance the student attitude in the classroom (Shahnaz and Bhatti, 2014).

Furthermore, the students are in need for improving their technical oral presentation skills in order to be good presenters since technical oral presentation has been clearly pointed out to be significance in the engineering undergraduates' minds (Benraghda, Ali, Radzuan, 2015; Radzuan & Kaur, 2016). Sendall et al. (2012) noted that business school graduates need excellent technical oral presentation skills as they enter the workplace. Engineering educators and instructors should carry on teaching students technical oral presentations skills across their engineering curriculum with an emphasis on boosting individual technical oral presentations. The results will basically benefit graduates in the engineering and technology job markets and beyond as well.

Acknowledgments

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Appendix A

Semi-Structured Interview Questions Developed by the Researchers of the Current Study

1   What is your feeling towards delivering technical oral presentations?

      a)   Can you give me an example of what you said?

2	What do you enjoy most when you are assigned for technical oral presentations?
3	Do you find any difficulty in delivering technical oral presentations?
	a) Why do you think it is difficulty?
4	How do you feel when you deliver a technical pair work presentation in English?
5	How do you describe your teacher's role in delivering technical oral presentations in classroom?
6	Is there anything you would like to add?