

Engineering Lecturers' Perceptions of Students' Technical Presentations in English: Negotiating Best Practices

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Abstract

The twin waves of globalization and internationalization in the 21st century demand competitive and global engineers to excel in both technical and non technical skills. Communication skills such as oral presentations are considered crucial skills that provide pathways for learners towards achieving communication competence (Dlaska, 1999). Research has also found that engineers in industries frequently engage in oral presentations (Hafizoah Kassim and Fatimah Ali, 2009). To highlight the importance of oral presentations for engineering students, engineering faculties in Universiti Malaysia Pahang place strong emphasis on this critical skill in the students' Final Year Project (FYP) marking scheme, where English is used for the FYP presentations. Being non-native speakers of English, the issues of second language anxiety and apprehension in delivering technical presentations feature predominantly among the engineering students. This qualitative study examines 6 faculty lecturers' practices in addressing the challenges and assessment procedures of students' FYP presentations in English. Semi-structured interviews were conducted with the engineering lecturers who were involved in the FYP supervision. The professional and personal experiences in the FYP supervision as well as assessment and evaluation practices at the faculty were analysed. Furthermore, constructive comments and recommendations in dealing with students' FYP presentations in English were also obtained. The findings of this study have important pedagogical implications for ESP practitioners especially those engaged in engineering education with regard to assessment issues in evaluating oral technical presentations.

Keywords: oral technical presentation; final year project; assessment

1. Introduction

The twin waves of globalization and internationalization in the 21st century demand competitive and global engineers to excel in both technical and non technical skills. Recent surveys with engineering employers reported that effective communication skills is the main skill or among the top skills that employers expect from engineering graduates, besides outstanding technical knowledge (Siller & Johnson, 2004). Besides communicating among colleagues and business partners, delivering presentations are also part and parcel of engineers' job scope (Kassim and Ali, 2010). They encountered that engineers in industries are frequently engaged in oral presentations. Presenting project findings or any kind of information to the circle of colleagues who are in the same technical field and delivering presentations to public are elements emphasized by ABET (2007). Dlaska (1999) further states that oral presentations are considered crucial skills that provide pathways for learners towards achieving communication competence. Furthermore, the

benefits of oral presentations or oral assignments are many (Quigley, 1998). They can

“encourage an active, involved role in learning, enhance listening skills, promote articulation of ideas and opinions, provide opportunities to hear how others respond to one's thinking, allow greater responsibility for their own learning, learn significant course content from others”

(Quigley, 1998: 41)

From a somewhat different perspective, this study provides the challenges faced by engineering lecturers in the process of evaluating Final Year Project (FYP hereafter) presentations in English. It describes the constraints as well as the assessment procedures of FYP presentations.

Implementation of the Final Year Project

For Universiti Malaysia Pahang (UMP) engineering students to graduate, they have to register for a Final Year Project (FYP) course during

their final year of study. The course is offered in two stages: Final Year Project I in Semester 1 and Final Year Project II in Semester 2. These courses require the students to conduct an experiment or a research individually and they will be supervised by faculty lecturers. In the first semester, the students need to do their project proposal (FYP 1) which contains Chapter 1, Chapter 2 and Chapter 3. In the second semester, the students will register for FYP II, where they will conduct data collection and discuss the findings. At the end of the second semester, a written report which consists of Chapter 1 to Chapter 5 will have to be submitted and an oral presentation presenting the findings will have to be delivered. Research found that this subject is proven to enhance engineering students' generic skills such as communication which is through communication with the experts in the field (lecturers and industry people), inculcate problem solving skills in solving the problems in the project, promote independent learning, hone oral presentation skills and thus boost their self confidence (Mohd.Sam, Abu Bakar, & Kassim, 2004). In fact, this subject is believed to successfully prepare the students for the workplace.

2. Methodology

2.1. The study

This study employed a qualitative method in gathering relevant data to understand the evaluation practices of engineering lecturers in grading their students' Final Year Project (FYP hereafter) presentations and their perceptions of students' technical oral presentations. The participants in this study comprised the engineering lecturers currently attached with the Faculty of Civil Engineering and Earth Resources (FKASA hereafter) in Universiti Malaysia Pahang (UMP). The random sampling method was used to choose the 6 respondents. Several related and important criteria were emphasized, namely, having more than 4 years of teaching experience and having evaluated students' FYP presentations more than 3 times. The selection of the respondents started with the main researcher's discussion with the FKASA FYP coordinator. Prior to that, a formal memo was sent to the Deputy Dean of FKASA asking for permission to collect data from the lecturers. Then, an internal memo was sent to obtain agreement from all the selected participants. Since all the participants were lecturers who had different class schedules and some of them held important administration posts and had tight schedules (classes and meetings), they were given the opportunity to choose the time and date from the proposed dates. Table 1 below shows the breakdown of the respondents in terms of gender and years of teaching experience:

Table 1: Profile of Respondents

Interviewees	Gender	Years of teaching experience
Lecturer 1	Male	7
Lecturer 2	Female	7
Lecturer 3	Male	7
Lecturer 4	Female	4
Lecturer 5	Male	5
Lecturer 6	Female	5

2.2. Instrumentations and procedures

The questions for the semi-structured interviews were developed by the researchers based on the objectives of the study. There were 7 questions which aimed at eliciting information that is related to FYP supervision and evaluation of FYP presentations as well as lecturers' perceptions of the students' performance in the oral presentations. Semi-structured interviews were conducted with 6 FKASA engineering lecturers individually at different dates, times and venues (based on the lecturers' availability). Each interview took about 30 minutes and was audio-recorded for analysis purposes. Key ethical considerations were adhered to in this study; for instance, prior to the interview sessions with the lecturers, they were informed that it would be audio-recorded and all information given would be considered private and confidential and would only be used for research purposes.

3. Results and discussion

This qualitative study examined 6 faculty lecturers' practices in assessment procedures of students' FYP presentations in English and their approaches in addressing the challenges.

3.1. Assessment procedures

Prior to FYP presentations, the FKASA students are given the presentation evaluation form which consists of specific rubrics (refer to Table 2). This form outlines key principles to help the students to better prepare their presentations. In fact, Quigley (1998: 42) states that "when instructors offer oral assignments with clear guidance and established grading criteria, students can become better prepared for many tasks they will face in the workplace". Oral presentation is given equal importance in the FYP course as it constitutes a 20% weightage of students' overall FYP marks. This percentage allocation accords the important role it plays in determining students' overall marks in the project.

Table 2 below illustrates the rubric used in the presentation evaluation form which is developed by the faculty:

No.	Item of evaluation	Marks allocated (%)
1	Ability to communicate orally (fluency, flow of presentation, appropriate attire & time)	4
2	Ability to discuss concisely and briefly about the technical content	12
	2.1 Wording of the project title	2
	2.2 Clarity of study/project objectives	3
	2.3 Ability to identify achievable scope of works	3
	2.4 Understanding & description about the methodology	2
	2.5 Appropriateness of the scheduling of the project activities	2
3	Sensitivity towards questions	4
Total marks allocated for or obtained by the student		20

Among the three main items of evaluation, 'ability to discuss concisely and briefly about the technical content' has the heaviest weightage, that is 12%. Both ability to communicate orally (fluency, flow of presentation, appropriate attire & time and sensitivity towards questions receive equal weightage which is 4%.

3.2. Meeting the challenges in assessing FYP presentations in English

3.2.1 Effective English communication skills

Engineering lecturers have been facing numerous challenges in grading FYP presentations. Since the study focuses on students' performance in oral technical presentations, all the challenges are viewed from the lecturers' perspectives. Research suggest that there is a clear relationship between effective communication skills and good technical knowledge (Martin, Maytham, Case, & Fraser, 2005). It is believed that the combination of both may guarantee an effective presentation. In the case of FYP presentations in UMP, English (a second language to Malaysian students) is the language of oral technical presentations. Therefore, the discussion of effective communication skills in this paper refers to effective communication skills in English language.

When the lecturers were asked to comment on their students' communication skills in English, all agreed that presentations will improve if the speaker possesses good English communication skills and good technical knowledge. One of the

Table 2: Items of evaluation and allocation of marks developed by the faculty

lecturers (Lecturer 2) shared her student's experience whereby the student received grade A due to her ability to communicate her technical content competently in her oral presentation. The panel members who evaluated her were impressed with her effective communication and oral presentation skills and they eventually awarded her high marks for her oral presentation, resulting in the student receiving an excellent for her FYP project (the overall marks for oral presentation is 20%).

Lecturer 5 commented:

"sometimes students can be good or excellent in their communication skills, but just because they lack technical knowledge that can hinder their ability to convey the message effectively during presentation. Yes, both aspects (excellent English communication skills and good technical knowledge) could produce effective presentations eventually"

(Lecturer 5)

During the interviews, majority of the lecturers (Lecturers 1,2,3,4 and 5) posed their concerns on civil engineering students' English oral communication ability. 2 lecturers highlighted:

"As far as Civil engineering students are concerned, many of them still have problems in speaking. Their speaking skills need to be further improved..."

(Lecturer 5)

" Many of our Malay students have an average English speaking ability"

(Lecturer 4)

The level of students' proficiency in English language played a major role in determining how well students performed in their FYP presentations, as expressed by the lecturers' below:

"majority of the students merely read from the slides and the main problem that we are facing now is that, the students are not explaining their project content very well"

(Lecturer 1)

"majority of them read from the slides and not don't seem to feel it 's necessary to explain the content to their audience effectively by looking at their audience..."

(Lecturer 2)

"some of the students seem to back away from clarifying their ideas and end up giving no explanations at all.... They need to realize that clarifying ideas is a crucial skill during technical presentations"

(Lecturer 4)

“most of the students have the idea (technical knowledge), but lack effective English speaking skills. When they are faced with this difficulty, they use Bahasa Melayu to explain their ideas.”

(Lecturer 5)

“most of the students can speak English, but during the presentation, they cannot explain the project that they are doing (in English), therefore, the students are allowed to explain in Bahasa Melayu”

(Lecturer 6)

On the other hand, there are lecturers who actually hold opposite views from the others in terms of students' English proficiency in general as they commented:

“the English ability of the students is good”

(Lecturer 4)

“they can speak in English proficiently as far as I am concerned...”

(Lecturer 6)

Furthermore, in analysing lecturers' opinions on their students' English language ability, two lecturers pointed out the students encountered a wide range of problems in answering questions from the panel members during the 'Question and Answer' session which is after the presentation. According to the lecturers, due to Malay students' low English proficiency, some of them cannot understand the questions asked which forces the panel members to simplify the questions (in English) or to translate the questions into Bahasa Melayu. When asked whether the students were actually allowed to use Bahasa Melayu in the session, these lecturers replied:

“We don't mind the language use (since the students cannot answer the questions in English) because our main aim is to evaluate if they can relay the content of their project efficiently”

(Lecturer 4)

“Yes, the students are allowed to use Bahasa Melayu during the Question and Answer session”

(Lecturer 6)

3.2.2. Sound technical knowledge

Besides effective English communication skills, sound technical knowledge was another vital factor that may contribute to outstanding technical presentations. Many lecturers expressed their concern over their students' technical knowledge especially on their FYP topic. Many of the lecturers were of the opinion that their students' level of self confidence in presentations increased when they had sound knowledge of content in the technical field. The following are excerpts from the lecturers' interviews:

“ you can be an effective communicator, but you must know your subject in detail, then it will increase your self confidence”

(Lecturer 1)

“ students with strong technical knowledge will be able to explain this aspect well in the presentation”

(Lecturer 2)

“some students have limited technical knowledge and this hampers their oral delivery of content”

(Lecturer 5)

“some students really do not understand what they are doing....I feel they should be told that having detailed knowledge of their topic will give them more confidence in delivering effective presentations”

(Lecturer 6)

Nevertheless, students' limited technical knowledge can affect the effectiveness of their presentations especially when the aim of the presentation is to measure students' understanding on their FYP topics.

The analysis of the lecturers' interviews revealed that majority of the civil engineering students experienced problems in oral communication skills and possessed limited knowledge of technical content. Such lacks made them feel more anxious during presentations and resulted in them receiving average grades.

3.2.3 Time factor

In the FKASA, the FYP Coordinator plays a key role in determining the schedule and venue for FYP presentations. For this semester, FYP presentations were scheduled at the end of the semester, which is during Study Week (Week 15). In one semester comprising 14 weeks, the 15th week is actually allocated for students to do preparation for their final examination. The lecturers commented on having FYP presentations during study week:

“We should avoid having FYP presentations during students' study week because it is actually allocated for them to prepare for their final examinations. Furthermore, the students have another 5 other subjects to study for other than the FYP project; therefore, these students may not put in much effort to concentrate on the presentations”

(Lecturer 4)

“ I have been hearing complaints from the students for the past 3 years that their main problem in preparing for the presentations is time constraint. They claim that they have to concentrate on their final exam. They feel the stress of doing this as well as having to

prepare for their presentations.”
(Lecturer 5)

Lecturer 4 added that the time constraints are not faced by the students only, but also the lecturers. In Week 15, normally lecturers focus on grading students' assignments and keying in all the marks in the system. Therefore, having FYP presentations during Week 15 may cause the lecturers to take it lightly too.

3.3. Anxiety in delivering FYP presentations

In Universiti Malaysia Pahang (UMP), the Center for Modern Languages and Human Sciences (CMLHS hereafter) offers various English communication courses for all engineering undergraduates. One of the courses in English Level 4 is the Introduction to Public Speaking, besides Effective Reading and Project-based Proposal Writing. In this course, presentation skills are taught and a lot of practice sessions are conducted to overcome stage fright among the registered students. However, the students have the chance to opt for the course that interests them and due to limited number of lecturers, only limited number of students can register for this course. Therefore, students who have undergone this course have more advantages. Even though delivering FYP presentations is different in content, the expected skills and performance is almost similar to doing public speaking.

Having low/average English speaking ability and limited technical knowledge could decrease students' self confidence in the presentation and thus these factors affect the performance of their oral FYP presentations. While those two factors could be the main reasons for students to feel apprehensive in delivering the presentations, the lecturers projected several other possible causes. Readiness is one of the reasons given by the lecturers for these students experience a certain level of anxiety during the presentations, as seen from the interview excerpts below:

“Readiness or preparedness before the presentation contribute to their self confidence or in other words, sufficient preparation affects the effectiveness of the presentation ”

(Lecturer 5)

“ students' preparations were not good...many showed high levels of anxiety during presentations ”
(Lecturer 3)

“some students take this presentation lightly; therefore, they do not really prepare for the presentation ”
(Lecturer 4)

In addition, the presence of evaluators in the room can also make some students experience fear in

delivering presentations. For instance, as stated by one of the lecturers:

“If the evaluators give fierce looks or give harsh comments on their report before they start their presentations, the students will lose their confidence and thus this can affect their performance”
(Lecturer 4)

Below is a diagram that illustrates the possible factors for anxiety in delivering FYP presentations and its effects on oral performance as a whole. The possible factors are English proficiency, students' preparation for the presentations, students' technical knowledge on the topic and evaluators' feedback.

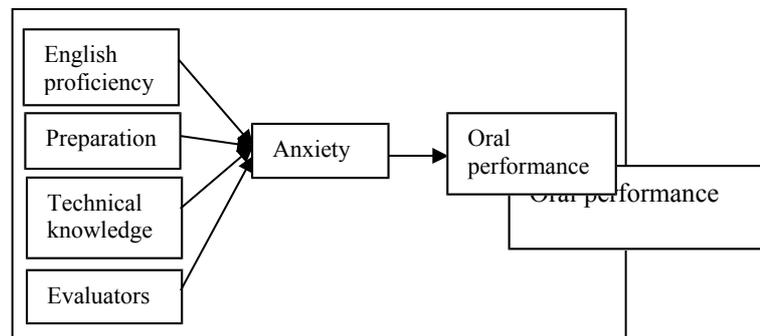


Figure 1: Factors causing anxiety in delivering technical presentations that may affect engineering students' oral technical performance

3.4 Benefits of Final Year Project to students' preparation for the workplace

According to Mohd Sam et al. (2004), civil engineering students attain many benefits from carrying out their FYP project and as preparation for their professional career in industry. Among the benefits are generic skills such as possessing the ability “to communicate effectively with confidence, identify, formulate and solve civil engineering and related problem, function effectively as an individual and in a team to achieve common goals and think positively and possess self esteem” (p. 3).

In the interview sessions, one of the lecturers expressed the view that the FYP project helps students to develop their communication skills, especially when they have to meet other people during their data collection process. In addition, the students will slowly learn to be independent learners even though at the beginning stage, they were more dependent on their supervisors for guidance and assistance. The process has helped them to be more mature and gain more self confidence. Furthermore, FYP presentations also prepare the engineering students for the workplace. One of the lecturers who reflected his experience working in the industry pointed out that engineers need to deliver oral presentations and present

findings of their project once a month during their progress meetings or monthly meetings. This supports the finding of Kassim and Ali (2010) that oral presentations are indeed a significant dimension in the life of an engineer.

Besides acquiring generic skills, one of lecturers also highlighted that the FYP project will also help the students in performing during job interviews because the successful performance of the project mirrors the ability of the students to solve engineering problems in practice. This shows that the FYP project offers a number of direct and indirect benefits for the engineering students to be successful engineers in the workplace.

3.5 Recommendations to improve FYP presentations in English

Several recommendations were made by the course lecturers pertaining to the issue of improving students' FYP presentations in English. Firstly, due to time constraints and other reasons, some students may take FYP presentations lightly. According to Lecturer 4, the significance of oral presentations in FYP project must be highlighted due to the high weightage given which is 20% of students' overall FYP marks. In addition, the formality of the setting of FYP presentations must also be strongly emphasized so that students will put in more effort and make adequate preparation for the presentations.

Secondly, several lecturers proposed FYP advisors to conduct mock presentations 2 or 3 weeks before the real presentation schedule so as to help increase students' self confidence and motivate students to organize better presentations.

“ Lecturers should have mock presentations for the students to enhance students' self confidence...” (Lecturer 6)

Lecturer 4 stated that the inspiration to facilitate the students through mock interview came from his personal experience during his doctoral study in the United Kingdom. He found that the mock interview helped him to be a better presenter and he felt that this feature could also help the students in gaining self confidence in delivering their oral presentations. He and other lecturer shared their experience in conducting mock presentations for the students:

“ During mock presentations for the students, I give crucial comments on how to improve the slides, some correction on the terms used, and I can see that student have more confidence after that...” (Lecturer 3)

“ For the pre presentation session, 2-3 weeks before the real presentation, I will book a

classroom or mini theatre and even invite some lecturers who are available. Sometimes I make it open for students as well. I make sure the students feel free to present, as I make it informal. The intention is to induce self confidence, motivate, prepare them mentally. I even check students' attire because some students' take physical appearance lightly. Yes, after the pre presentation, the confidence level improves and eventually, they are more prepared and mentally ready for the presentation.”

(Lecturer 5)

Even though most lecturers found mock interview as a good initiative to assist students, one lecturer expressed the view that it would be dependent on lecturers' and students' availability of free time as such a feature is considered time-consuming. Lecturer 4 put it very simply:

“good if the students and supervisor have enough time...” (Lecturer 4)

Thirdly, the right timing for presentations also helps the students to show better preparation ability for their presentations. Lecturer 4 suggested making changes to the current practice of slotting the FYP presentations during the study week. She clearly stated:

“avoid study week..., students are busy preparing for final exams, therefore, they might take FYP presentations lightly and not accord it the importance it deserves”

(Lecturer 4)

This lecturer also added that if time permits, she believed that the students must have the chance to practice their presentations several times in an effort to help them improve their presentations. Nevertheless, Lecturer 6 pointed out that

“ some students have attitudinal problems. No, time is not the factor, they have ample time to prepare for their presentations.”

(Lecturer 6)

Finally, another suggestion from the lecturers is positive feedback from the evaluators. Showing approval and giving some compliments at the beginning of the presentation can boost students' confidence in delivering their presentations, as stated by one of the lecturers:

“ The evaluators should show positive behaviour to the students; they need to provide positive feedback to their students and not always be overly critical....they know how students respond positively to good comments”

(Lecturer 4)

Therefore, it is recommended that the evaluators keep their negative comments until the end of the students' presentations.

4. Conclusion

The present study has identified the challenges that engineering educators face in evaluating students' FYP presentations in English. As the data from the interviews show, effective oral communication skills in English and good technical knowledge may result in effective presentations. The interview data from this study make it clear that lecturers need to focus more on assisting students to improve their oral technical presentations. In today's increasingly globalised work environments, engineering graduates are faced with solving increasingly interdisciplinary and complex technical problems that require clear communication and presentations skills. The findings of this qualitative study point out the importance of oral communication skills being seen as an integral part of an engineer's formal education. The implications are that the role of engineering educators to equip students with technical knowledge is highly important and the role of English and communication lecturers are becoming more significant and relevant in enhancing students' English communication skills especially in giving oral presentations.

In conclusion, it is important to emphasize that despite engineering lecturers' challenges in FYP supervision and evaluation process, the FYP course undoubtedly benefits and prepares engineering students with both technical skills as well as generic skills such as good presentations skills. With effective technical and English communication skills, our local engineering graduates will be more competitive in the job market.

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References

1. ABET, I. (21 January 2010). ABET Retrieved 10 January 2010, 2010, from <http://www.abet.org/index.shtml>
2. Kassim, H., & Ali, F. (2004), English communicative events and skills needed at the workplace: Feedback from the industry,

English for Specific Purposes (2010), doi:10.1016/j.esp.2009.10.002

3. Martin, R., Maytham, B., Case, J., & Fraser, D. (2005). Engineering Graduates' Perceptions of How Well They Were Prepared for Work in Industry. *European Journal of Engineering Education*, 30(2), 167-180.
4. Mohd.Sam, A. R., Abu Bakar, S., & Kassim, K. A. (2004). *Inculcating Generic Skill for Civil Engineering Students Through Final Year Project*. Paper presented at the Conference on Engineering Education
5. Quigley, B. L. (1998). Designing and grading oral communication assignments. *New Directions for Teaching and Learning*, 74, 41-49.
6. Siller, T., & Johnson, G. (2004). *Constituent Influences on Engineering Curricula*. Paper presented at the *American Society for Engineering Education Annual Conference & Exposition*

Biodata

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