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TECHNICAL ORAL PRESENTATIONS: KNOWLEDGE AND PRACTICES AMONG TECHNICAL STUDENTS

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Abstract*: Oral presentation is one of the challenging tasks faced by most tertiary level students. For technical students, they have no exception in delivering technical oral presentations (TOPs) at the end of each course offered according to their fields of expertise. Realising the fact that these students should have been exposed well with integral requirements of TOP, it is essential to find out the students' knowledge and practices on this type of presentation beforehand. Thus, this paper does not only aim to explore the respondents' overall feedback on TOP, but also to find out the respondents' experiences in conducting TOP. A random survey was therefore conducted and 130 students of Universiti Tun Hussein Onn Malaysia, specialised in different technical fields were selected to be the participants. A questionnaire consisted of 20 items which required them to reflect on their knowledge and experiences regarding TOP were utilised to reveal results for this research. In addition, the reflections of their experiences revealed their awareness and mistakes made during their own TOP. It is hoped that these results helped to raise awareness among technical educators about the problems occurred among their students, so that suitable guidelines and best practices can be adapted into their teaching and learning process.*

Keywords: *technical oral presentations, technical students, knowledge, and practices*

Introduction

Technical oral presentation (TOP) is normally viewed as 'a prepared formal talk or speech on specific area such as scientific, engineering, technological, business types, regulatory, legal, managerial, or social scientific information topics to non-technical audience' (DiSanza & Legge, 2003). Other than the foundation in the core courses, TOP is also among the priorities emphasised in technical fields, specifically in tertiary level. For instance, students in engineering field need to prepare themselves for a variety of technical oral presentations including design proposal presentation, progress report of an on-going work or the final result of a project. These TOPs, which are part of their formal and informal assessments (Raha & Sarjit, 2011), are aimed to let the technical students communicate key information about their project orally. Thus, delivering TOP is considered as one of the most important skills that every technical student should possess prior to graduation.

According to Bhattacharyya (2013), professionals nowadays are expected to have a set of technical knowledge, multi-disciplinary and interpersonal skills. This can be related to the fact that they need to multi-task and are required to deal with various workplace communicative events such as meetings, discussions, and presentations (Tenopir & King, 2004). This is supported by the result presented in the study conducted by Hafizoah & Fatimah (2010) where working engineers are observed to have frequent TOPs as compared to written reports at their workplace. Therefore, the prospective graduates' knowledge and practices in TOPs while they are still studying are crucial in preparing them to be an effective member of any professional bodies in future.

However, most students these days are undeniably overwhelmed by the requirements and communication skills needed in order for them to conduct an effective TOP. They are aware yet anxious of the importance of having preparation for the structure and content of the presentation, appropriate language as well as good delivery techniques. This is because their mastery of TOP is imperative not only for their academic purposes but also to increase their chances of employment after graduation (Mahani, Noor & Norasnita, 2014). The local and international engineering accreditation organisations such as the Malaysia Engineering Accreditation Council (EAC) and the Accreditation Board of Engineering and Technology (ABET) also have outlined 'effective oral and written communication skills' as among the skills required among engineering graduates (Raha & Sarjit, 2011). When comparing the researchers' experience observing students' TOPs with the fierce competition in the industry, their capabilities to be at par with the existing players are quite disturbing. Therefore, this study was conducted to find answers to the following questions:

1. What do the respondents' know about TOP?
2. What are the respondents' practices when conducting TOP?

Methodology

The study involved technical students from Universiti Tun Hussein Onn Malaysia Johor (UTHM). Currently, they are studying in several faculties, specialising in different technical fields. They were approached to participate in this research by a random survey. The data was collected through survey forms consisted of 20 items designed specifically for this project. 150 questionnaire were distributed yet only 130 (55 males and 75 females) were carefully selected to be analysed. The questionnaire required the respondents to reflect their knowledge and recall

their experiences and practices in TOP in order to help the researchers explore the main problem underlying their difficulties in oral presentations. All the data were computed into SPSS (Statistical Package for Social Science) to elicit the result for this study. The quantitative data collection was completed within two months. These findings however only partially present the general knowledge as well as practices of the technical students of this university.

Summary of Findings

The 20 items in the questionnaire answered by each respondent revealed interesting results. Such results can be grouped into two main aspects: 1) Respondents' Knowledge on Technical Oral Presentation and 2) Respondents' Practices when conducting TOP.

1.0 Respondents' Knowledge on Technical Oral Presentation (TOP)

1.1 Criteria of a TOP

There are a few items in the questionnaire that revealed the respondents' general knowledge on the difference between common oral presentations and technical oral presentations. When asked about the comparison between both type of presentations, 89 respondents (68.5%) claimed that they did not know or unsure about the differences. The remaining 41 respondents (31.5%) were confident of their own understanding of the differences.

When asked about the criteria of a TOP, those who were confident listed the criteria as included in the following table:

Table 1: Criteria of TOP

Criteria	Frequency	Percent	Valid Percent
Clear outline	34	26.2	26.2
Specific format	27	20.8	20.8
Specific visual aids	27	20.8	20.8
Specific layout	20	15.4	15.4

In comparison, those who did not know or unsure about the criteria also suggested the similar order of responses. The results are shown in the following table:

Table 2: Suggested Criteria of TOP

Criteria	Frequency	Percent	Valid Percent
Clear outline	64	49.2	49.2
Specific format	60	46.2.	46.2
Specific visual aids	47	36.2	36.2
Specific layout	39	30.0	30.0

These results show that although the number of respondents who were unsure about TOP criteria was relatively higher than those who were confident, both groups of respondents in fact had some ideas on the important elements of TOP. Both groups listed 'clear outline' as the main

criteria of a TOP, followed by 'specific format, visual aids and layout'. Based on the result, most technical students still thought that they do not know or unsure about their own understanding of the real concepts of TOP although they had been exposed to numerous TOPs indirectly and they themselves had applied some of the criteria in their TOPs. At the same time, the students who were confident of their own knowledge also merely listed the TOP criteria based on their experience only. This is possibly due to limited formal input and guidelines on TOP by the content instructor each time they were required to do any TOP.

1.2 Estimation of number of slides when presenting a TOP

When asked about the number of slides that they should prepare for a 5-10 minutes presentation, most respondents answered that they should prepare more than 5 slides. Table 3 indicates their knowledge on the number of slides when presenting a TOP.

Table 3: No. of slides should be prepared for a TOP

No. of slides	Frequency	Percent	Valid Percent
1-5	9	6.9	6.9
6-10	76	58.5.	58.5
More than 10	45	34.6	34.6

The results from the above table illustrate that most of them viewed that a range of 6-10 slides is the best preparation for a 5-10 minutes presentation. This estimation revealed the respondents' basic knowledge of the requirements of a TOP especially in preparing visual aids. According to Marshall, a ten-minute TOP should generally have 7-10 slides because technical topics involve complex ideas which at least need approximately 1.5 to 2.5 minutes to cover a slide of a single main idea (2006).

1.3 *Content organisation of a technical slides presentation*

In dealing with an oral presentation, students should also know how to organise the content of their presentation appropriately to ensure a smooth presentation flow and make the presentation as effective as possible. Thus, one question in the survey required the respondents to choose the best elements in organising the content in a TOP. The presented data below indicated the best to the least practice of content organisation suggested by the respondent.

Table 4: Content organisation of a TOP

Elements of TOP	Frequency	Percent	Valid Percent
Putting only key points	123	94.6	94.6
Putting only pictures	93	*71.5*	71.5
Limit the number of the words in a slide	82	63.1.	63.1
Putting only diagrams /graphs/tables	64	*49.2*	49.2
Mixture of all mentioned	12	*9.2*	9.2

Table 4 depicts the results of the respondents' awareness on the organisation of a TOP content. It obviously shows that majority of the respondents (94.6%) were aware that visual aids for a TOP should emphasise on 'putting only key points'. The next two elements are 'putting only pictures' and 'limit the number of the words in a slide'. These top three elements chosen by the respondents demonstrate another necessary knowledge on content organisation of a technical slides presentation that the respondents had. Most of them understood that the content in TOPs should be concise, straightforward and relevant that it does not require too much elements in the slides presentation.

1.4 Overall perception of TOP elements

Most of the respondents (68.5%) agreed upon these two important elements of TOP in which they claimed that a TOP should contain technical terms in the delivery of the content or in the visual aids and the layout must look technical (56.9%) with limited colours in the background. This is especially relevant when the TOP's audience consists of professionals in formal setting. The data were presented as follows:

Table 5: Overall Perception of TOP

Perception of TOP	Frequency	Percent	Valid Percent
Words used must be technical	89	68.5	68.5
Technical layout	74	*56.9*	56.9
Limited colours of backgrounds	57	43.8	43.8

2.0 Respondents' Practices when conducting TOP

The second part of the study reveals the respondents' experiences when completing their TOP assessments. The results are categorised as the following:

2.1 Number of slides and organisation prepared

Most of the respondents claimed that based on their previous experiences, they normally prepared between 6-10 slides for a 5-10 minutes presentation. A total of 96 respondents (73.8%) did this and the remaining 34 respondents (26.2%) limited their presentation to less than 5 slides.

On the other hand, 68 respondents (52.3%) prepared less than 5 slides featuring only word content, while the rest, 62 respondents (47.7%) prepared between 6-20 slides containing this element, which found to be too overloaded for a TOP.

Meanwhile, according to the respondents, the number of slides which contain only pictures and visuals prepared by them were roughly less than 5. This was admitted by 106 respondents (81.5%) and the remaining respondents (18.5%) claimed to have more than 5 slides containing this element.

These practices showed that to a certain extent, most respondents had some knowledge of TOP.

2.2 Outline of TOP

The presentation outline, which consists of the sequence of all main ideas of the presentation, is one of the main features in an effective TOP. It will not only make the presenter aware of his/her content organisation, but it also assists the audience to anticipate the flow of the presentation. Therefore, it is expected that all technical students put this element before they start with the main content of the presentation.

When asked about the content put in the first slide, most respondents claimed that they put the outline of the presentation rather than going straight to the content points. These were agreed by 86 respondents (66.2%) in contrast to only 44 respondents (33.8%) who claimed to go straight to the content points instead.

2.3 Common mistakes experienced when delivering a TOP

Most of the respondents claimed their previous experiences in TOP made them aware and concern about the mistakes made in delivering oral presentations. The list of common mistakes that they experienced when delivering a presentation is as follows:

Table 6: Common mistakes when delivering a presentation

Common mistakes made	Frequency	Percent	Valid Percent
Grammatical mistakes during the presentations	80	61.5	61.5
Presentation skills	74	56.9	56.9
Grammatical mistakes on the slide	54	41.5	41.5
Putting wrong content in the slide	33	25.4	25.4
Putting a wrong layout	29	22.3	22.3

To deal with the common mistakes made when delivering presentation, the respondents' main concern of their own presentation based on their experience was also asked. Table 7 presents their main concern of their own TOP. 89 of the respondents (68.5%) claimed that their main concern was on their delivery of ideas or message rather than their presentation skills (16.9%) and language used (14.6%). This could possibly explain why most of them made grammatical mistakes in the slide or while delivering TOP because attention paid to presentation skills and language were very little

Table 7: Main concern of own presentation

Main concern	Frequency	Percent	Valid Percent
Ideas and message delivered	89	68.5	68.5
Presentation skills	22	16.9	16.9
Language used	19	14.6	14.6

2.5 Overall performance of the presentations

When rating their own performances, most respondents felt that they need more improvement for their own presentations. This was agreed by 80 respondents (61.5%), while 47 respondents (36.2%) admitted to have moderate performance. Only 3 respondents (2.3%) claimed to have excellent performances when delivering presentations. Hence, majority of them were still unsatisfied with their own TOP, thus they need to improve their knowledge and skills in the areas affected, such as language use, delivery style as well as the core content of the TOP.

Conclusion

The results of this study signify that most technical students have already acquired some basic knowledge of TOP. Most of them even had already applied some of the essential elements of TOP when doing presentations without realising it. Despite the positive result indicated, there still exist some issues that need to be addressed. To attend this, the technical students should be exposed to the basics and requirements in oral presentation explicitly. The content instructor should also take heed of the language aspect and delivery techniques as much as the subject matter because each element plays a role in achieving an effective TOP. Therefore, it is recommended that the content instructor collaborate with the language instructor to polish the technical students' language skills and develop their self-confidence by improving their delivery style in TOP. In guiding them towards their future profession, the content instructor may also explore the best methods to expose and encourage the students to go the extra mile to improve their own TOP. Collaboration with the industries could be a great start too in order to understand the criteria required and at the same time prepare the students to meet the needs and expectations of their prospective companies upon graduation.

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