

Communicative Competence in Technical Oral Presentation: That “Magic” Perceived by ESL Educators versus Content Experts

Ena Bhattacharyya, and Zullina H. Shaari

Abstract—Till date, English as a Second Language (ESL) educators involved in teaching language and communication to engineering students face an uphill task in developing graduate communicative competency. This challenge is accentuated by the apparent lack of English for Specific Purposes (ESP) materials for engineering students in the engineering curriculum. As such, most ESL educators are forced to play multiple roles. They don tasks such as curriculum designers, material writers and teachers with limited knowledge of the disciplinary content. Previous research indicates that prospective professional engineers should possess some sub-sets of competency: technical, linguistic oral immediacy, meta-cognitive and rhetorical explanatory competence. Another study revealed that engineering students need to be equipped with technical and linguistic oral immediacy competence. However, little is known whether these competency needs are in line with the educators’ perceptions of communicative competence. This paper examines the best mix of communicative competence subsets that create the magic for engineering students in technical oral presentations. For the purpose of this study, two groups of educators were interviewed. These educators were language and communication lecturers involved in teaching a speaking course and content experts who assess students’ technical oral presentations at tertiary level. The findings indicate that these two groups differ in their perceptions.

Keywords—Communicative competence, Content experts, Educators, Technical Oral Presentations.

I. INTRODUCTION

WORKPLACE communication and competency studies echo employer demands on the need to equip engineering students with effective communication skills [1]. The concept of effective communication skills is synonymous with the notion of communicative competence. Communicative competence is associated with one’s adaptation of a communication situation by demonstrating skills in appropriate knowledge relevant to the communication situation and context [2]. In other words, communicative competence is associated with the demonstration of ones’ communicative skills, knowledge and ability particular to

a communicative context. Thus, to be considered competent, a set of competency skills must be displayed.

II. LITERATURE REVIEW

The need to develop communicatively competent individuals is accentuated in engineering curriculum context following pedagogical emphasis on learner outcome as stipulated through the Outcome Based Education (OBE). In fact, one of the learner outcomes specify the need for engineers to “communicate effectively” [3]. This shift in pedagogical emphasis toward communicative competence has resulted in tensions among English as a Second Language (ESL) educators and content experts. The cardinal utility of communicative competency requirement is not yet clearly identified [4]. As such, ESL educators and content experts (such as engineering lecturers) are in a quandry over the best mix of subsets of communicative competence needed to create that magic for engineering students in technical oral presentations.

Such tensions are indicated in communicative competency studies which reveal varying competency requirement among engineering students. Among the sub-sets of communicative competence that prospective engineers should possess incorporate technical, linguistic oral immediacy, meta-cognitive and rhetorical explanatory competence [5]. Technical competence refers to content mastery, application of technical knowledge through use of specific technical language and jargon in discussion points of a presentation [6]. Linguistic oral immediacy suggests use of interactive language, visual language, analogies and humorous experiences to create that sense of connectedness with the audience [7]. Meta-cognitive competence is associated to “one’s knowledge concerning one owns’ cognitive processes and products or anything related to them” [8].

Another study mentions the importance of technical and oral immediacy competence as essential communicative competence features necessary for students’ performance in technical oral presentations [9]. In other words, discrepancy exists among educators on the cardinal features required in the sub-sets of communicative competence. Varying perceptions on communicative competence dwell among educators. Studies also indicate a shift in sub-sets of communicative competency requirement toward ESP related competence [10].

ESP differs from General English as it designed to meet specific disciplines, needs and communicative practices of

Ena Bhattacharyya: PhD candidate at Faculty of Language and Linguistics, University of Malaya, Kuala Lumpur, Malaysia and Senior Lecturer of Management and Humanities Department, Universiti Teknologi PETRONAS, Bandar Seri Iskandar, 31750 Tronoh, Perak Darul Ridzuan, Malaysia. (phone: +605-3687752; fax: +605-3656280; e-mail: ena_bhattacharyya@petronas.com.my).

Zullina H. Shaari is with the Department of Management and Humanities Universiti Teknologi Petronas, Tronoh Perak Malaysia (email: zullina_shaari@petronas.com.my).

particular learners or professional groups [11]. ESP caters to specificity and provides learners with the specific linguistic features and genre used in specific disciplines [12]. However such specificity is increasingly threatened by the move toward generic skills transferable to other multidisciplinary fields. Such move further curtails already limited ESP language materials use in terms of grammar, lexis, register, study skills, discourse and genre.

In the context of this study, the findings seek to ascertain queries to the research question which is stated as:

1) What is the communicative competence requirement perceived by ESL educators and Content experts?

a) What are the similarities between ESL educators and Content Experts perceptions of communicative competence in technical oral presentations?

b) What are the differences between ESL educators and Content Experts perceptions of communicative competence in technical oral presentations?

III. METHODOLOGY

For the purpose of this study, 6 ESL educators and 13 content experts were selected by the snowball technique sampling. The ESL educators have been selected as they conduct a speaking course and provide during the foundation years of the students' engineering program. Content experts are engineering lecturers involved in the assessment of students' technical oral presentations.

The qualitative phase was conducted to gain an "emic perspective" and record "words of participants" in order to avoid researcher biasness [13]. Semi-structured interviews are chosen as this form of interviewing provided the flexibility to rephrase questions to ensure correct interpretation of the questions.

Prior ethical sanction was obtained to conduct the said study from the participants of the university. All participants were notified that interview sessions would last for 40 minutes to an hour. Prior interview sessions, the participants signed a consent form to acknowledge the purpose of the said investigation. Participants were not coerced into providing any feedback and had the liberty to opt out of the study if they intended to.

According to [14], interviews enable researchers to explore the "range of opinions, the different representations of an issue, and is not centered on counting opinions of people". Interviews were chosen as one is able to "listen carefully to what people say or do in their life setting" and "position themselves" in the research to "acknowledge how their interpretation flows from their own personal, cultural, and historical experiences" [15]. In cases where clarification was required, loosely semi-structured interviews were conducted with participants to ascertain the said ambiguity.

During the interview participants were required to comment on communicative competence with specific focus on linguistic competence necessary for engineering students involved in technical oral presentations. Generalizations cannot be assumed in such research design but provides an indication of linguistic competence construct from the

participants' perspective.

Interview feedback was transcribed and thematically analyzed using the theoretical framework [16] for analyzing qualitative data. The said framework includes six main steps as "organizing and preparing the data; reading through all data; coding; narrating descriptions and themes; and interpreting data".

In addition, the Computer Assisted Qualitative Data Analysis Software (CAQDAS) NVivo version 8 was used to statistically analyze the qualitative responses. The text was divided to small units followed by "labeling the exact words of the participants by hand or electronically by software data analysis program" [17]. Percentages were tabulated to indicate the level of agreement and tensions among the educators on the linguistic competency requirement in technical oral presentations.

IV. FINDINGS AND DISCUSSION

The content of the interview was analyzed qualitatively. The analysis revealed three sub-sets of communicative competence: technical, disciplinary and linguistic oral immediacy perceived important among engineering graduates. As mentioned, technical competence indicates mastery of technical content and application of such knowledge in a communicative context [6]. Disciplinary competence infers ability to include use of conceptual and simplified terminology, technical definition, new academic findings within parameters of study, economic value, real world application and problem solution order [18]. Linguistic oral immediacy captures visual and interactive language that create the engagement with the audience [7].

In other words, linguistic competence infers technical competency or mastery and application of technical content; competency in use of discipline specific genre and findings, and the interactive element to create that magic in technical oral presentations.

As illustrated in Table I, the results indicate that both groups (i.e. ESL educators and content experts) placed high emphasis on two sub-sets of communicative competence among engineering graduates, namely, technical and linguistic oral immediacy. However, the level of emphasis differed among the educators.

TABLE I
THE SUB-SETS OF COMMUNICATIVE COMPETENCE

No	Competence	Content Experts' Perceptions (%)	Language Lecturers' Perceptions (%)
1	Technical	92	83.3
2	Linguistic Oral Immediacy	85	83.3
3	Disciplinary	69.2	0

For example, the content experts perceived that technical competence should have higher emphasis than the linguistic oral immediacy, whilst the language and communication lecturers believed that both sub-sets of competence should be equally presented as training inputs. Surprisingly, the third sub-set, that is, disciplinary competence, was only prevalent

among the content experts, but was absent among language and communication lecturers.

The findings also revealed that both groups highly valued only two of these sub-sets: technical and linguistic oral immediacy. This is contrary to previous research in which professional engineers gave high emphasis on four subsets of communicative competency: technical, rhetorical explanatory, meta-cognitive, and linguistic oral immediacy [5].

Nonetheless, the results suggest that both educators (regardless of their training background) and professional engineers possess some common understanding of communicative competence. The content experts, the language and communication lecturers, and professional engineers agreed that technical and linguistic oral immediacy competencies are part of communicative competence. In fact, these two sub-sets of communicative competence were also perceived important by engineering graduates [9].

These cardinal communicative competence features attribute to creating that "magic" in technical oral presentations.

However, the absence of disciplinary competence among language and communication lecturers suggests that that language and communication lecturers tended not to tailor their teaching and learning materials for engineering students. In other words, although disciplinary competence was perceived significant among content experts, the non-content experts would likely not pay attention to the learners' specific needs, which is one of the absolute characteristics of ESP [19].

The non-customized teaching and learning materials may have been triggered by the lack of ESP materials tailored for engineering fields or educators' limited awareness or knowledge of the need to do so. This predicament does not assist the engineering students to grasp the relevance of language and communication courses to their needs and eventually makes the learning slower and less effective [19]. Given that engineering graduates are expected to function effectively in their target situations, that is, communicating effectively in their workplaces, they should be equipped with ESP.

V. CONCLUSION

The study indicates the perceived cardinal features deemed necessary by educators to create that magic in technical oral presentations. However, differences in communicative competency requirement among language and communication lecturers and content experts reveal the need for language and communication experts to stress on ESP genre and disciplinary competence. Such effort is necessary to bridge the wide linguistic disciplinary competence disparity between the ESL educators and content experts.

Content experts see the crucial need for the said cardinal features while educators involved in providing the required communicative competence input to graduating students do not see the relevance. Such disparity if left unchecked continues to create tensions in the way educators and novice experts view communicative competence construct.

Efforts must not be spared to accentuate the importance and inclusion of ESP materials in the teaching and learning of communicative competence at tertiary level. In particular, language and communication lecturers should be equipped with training and exposure to authentic genre used among discipline specific organizations or focal groups. Such exposure and input will enable ESL educators at tertiary level to lessen the linguistic tension with content experts.

ACKNOWLEDGMENT

This study has been funded by the Management of the research University for the main author to embark on the doctoral program to conduct the study. Appreciation is also expressed to all educators (ESL educators and content experts) who volunteered as participants in the study.

REFERENCES

- [1] Venkatesan, P., & Ravenell, R. (2011). What is the most important skill/quality in the engineering workplace? [The way I see it] Potentials, IEEE Xplore, 30(3), 6-8.
- [2] Lailawati Mohd. Salleh. (2008). Communicative Competence: A Malaysian Perspective. Human Communication. A Publication of the Pacific and Asian Communication Association, 11(3), 303-312.
- [3] Hovde, M. R. (2005). Preparing students for global engineering workplace communication. Paper presented at the American Society for Engineering Education Conference, Indiana Sectional Conference DeKalb, IL.
- [4] Cunningham, D. (2008). Core competency skills for technical communicators. Professional Communication Conference IPCC, IEEE International, 1-6.
- [5] Bhattacharyya, E. (2012). Communicative Competence: Novice versus Professional Engineers' Perceptions, Proceedings at ICSBS 2012: International Conference on Social and Behavioral Sciences, 6-7 December, Penang, Malaysia, [in process].
- [6] Robinson, M. A., Sparrow, P. R., Clegg, C. and Birdi, K. (2005). Design engineering competencies: future requirements and predicted changes in the forthcoming decade. Design Studies, 26, 123-153. doi: 10.1016/j.destud.2004.09.004
- [7] Dannels, D. P. (2009). Features of success in engineering design presentations: A call for rhetorical knowledge. Journal of Business and Technical Communication, 23, 399-427.
- [8] Kalaimani, R., & Kaliamoorthy, S. (2007). Using IT to improve the oral and aural performance of Tamil language students by developing metacognitive skills. In Chitra Shegar & Ridzuan Bin Abdul Rahim (Eds.), Redesigning pedagogy: Voices of practitioners (pp. 157). Singapore: Pearson Education South Asia.
- [9] Bhattacharyya, E. and Sargunan, R. (2009). The Technical Oral Presentation Skills and Attributes in Engineering Education: Stakeholder Perceptions and University Preparation in a Malaysian Context, 20th Annual Australasian Association for Engineering Education Conference, 1029-1036.
- [10] Isohella, S. (2010). What Working Life Requires: An Approach to a Technical Communication Competency Model. Professional Communication Conference IPCC, IEEE International, 310-314.
- [11] Hyland, K. (2007). English for Specific Purposes: Some Influences and Impact. In: J. Cummins and C. Davidson (eds.). International Handbook of English Language Teaching, US: Springer. 15, 391-402.
- [12] Hyland, K. (2002). Specificity revisited: How far should we go now? English for Specific Purposes, 21, 385-395.
- [13] Patton, M. Q. (2002). Qualitative research & evaluation methods (3rd ed.). Thousand Oaks, California: SAGE Publications.
- [14] Bauer, M. W. and Gaskell, G., (2000). Qualitative researching with text, image and sound. A practical handbook. London: Sage Publications.
- [15] Creswell, J. W. (2007). Qualitative enquiry & research design: Choosing among five approaches (2nd ed.). Thousand Oaks, California: Sage Publications.
- [16] Creswell, J. W. (2003). Research design: Qualitative, quantitative and mixed methods approaches (2nd ed.). Thousand Oaks, CA: Sage.

- [17] Creswell, J. W., & Clark, V. L. P. (2007). *Designing and Conducting Mixed Methods Research*. California: SAGE Publications.
- [18] Sharma, S. D. (2007). *Textbook of scientific and technical communication writing for engineers and professionals*, Retrieved from <http://www.ebookdb.org/reading/54G3GE38247A1C1217G0G269Textbook-of-Scientific-and-Technical-Communication-Writing-for-Engineers-and-Professionals>
- [19] Hutchinson, T. and Waters, A. (1987). *English for Specific Purposes: A Learning-Centred Approach*. Cambridge University Press.

Bhattacharyya, Ena is a Senior Language and Communication lecturer currently attached to Universiti Teknologi PETRONAS, Perak Darul Ridzuan, Malaysia. She has presented in both local and international conferences and published her studies in *Journal of Applied Sciences*, *The Qualitative Report* and *International Learning Journal*.

She is a co-Editor of a recently published book titled, "New Media Communication Skills for Engineers and IT Professionals: Trans-National and Trans-Cultural Demands" published by IGI Global, USA. Her research interests include oral and written communication, business and technical communication, Applied Linguistics and ESL. She welcomes researchers to network in similar fields of interest.

Zullina H Shaari is a part-time PhD candidate at an Australian university. She is a lecturer at Universiti Teknologi PETRONAS, Perak Darul Ridzuan. She is a member of International Association of Business Communicators (IABC). Her research interests include corporate branding and corporate communication.