

## Technical Oral Presentation: Analyzing Communicative Competence of Engineering Students of Pakistan for Workplace Environment

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### Abstract

Communicative competence plays significant role for engineering students to perform various oral communicative tasks efficiently at workplace following graduation. The respondents for this study were twenty five engineering students who participated in this study from two engineering universities of Pakistan. This study employed purposive sampling method since respondents were drawn on specific criteria of only final year engineering students. The instruments used for this study for data collection purpose were recording of oral presentations to capture communication strategies employed by engineering students to overcome communication deficiencies during oral presentations. Data were analyzed qualitatively using strategic competence framework of Canale and Swain (1980). Additionally, Dornyei and Scott's (1995) compiled Inventory of Strategic Language Devices was used to explore the types of strategies that engineering students employ to overcome communication deficiencies when they face any communication deficiencies. Open coding (Richards, 2005; Strauss and Corbin, 1998) was used to code the oral presentation data. The results of the study revealed that engineering students used three communication strategies namely message reduction, code switching, use of fillers and self repetition strategies to overcome communication deficiencies during oral presentations. The findings of the study can be used as a guideline to focus strategic competence of engineering students to prepare them productive engineers for modern industry.

**Keywords:** Communicative competence, Engineering students, Workplace environment

### 1. Literature Review

The authors of Educating the Engineer 2020 write that engineering students prepared for 2020 and beyond must communicate well (Committee on the Engineer of 2020, 2005). Engineering graduates need to possess effective communication skills since they have to perform various communication tasks at workplace such as oral presentations, discussions, conversations, negotiations and other type of client communications. Thus, engineering organizations demand effective communication skills of engineering graduates to run business of organizations productively. According to Korte et al. (2008) industry recognizes the importance of communication skills for engineering graduates. This is because communication skills have become important in all professions thus, recruiters of national and international organizations demand effective communication skills of engineering graduates. It has been best seen that engineering graduates equipped with effective communication skills have a competitive advantage over fellow engineers who lack in this skill at all levels such as during job interviews and at workplace following job employment. Thus, employers focus communication skills of engineering graduates during job employment interviews.

The term communicative competence is a very broad domain and researchers in this field come from different array of backgrounds (Wilson and Seabee, 2003) such as language, communication, psychology and sociology. Although there is a very broad field of communication unfortunately, still the term lacks definitional consensus (Wilson and Seabee, 2003) and every researcher has defined it differently (Jablin and Sias, 2001). Communicative competence refers to the ability of a speaker to communicate the message correctly in order to achieve its communication goal. The concept of communicative competence was coined by Hymes in the year 1972. He was of the opinion that

communicators should learn language more than grammar. Thus, he approached communicative competence from linguistic as well as anthropological perspective point of view. It is envisaged that engineering students by practicing certain grammatical rules would never be able to perform communicative tasks at workplace since modern workplace has become more demanding in this modern age of global industrialization. Thus, engineering students of Pakistan need to possess communicative competence to perform various communicative tasks in order to bring prosperity for organizations.

Later, Canale and Swain (1980) proposed a model of communicative competence and this model contains three competencies such as grammatical competence, sociolinguistic competence, and strategic competence. However, afterwards Canale (1983) made some modifications to original model of 1980 and included fourth dimension as discourse competence. Grammatical competence in this model is related with rules of word formation, sentence formation, pronunciation, spelling and vocabulary. As far as grammatical competence is concerned Bhatia (1997) is of the view that grammatical competence is least problematic to carry out successful communication. Sociolinguistic competence covers mastery of appropriate language use in different social contexts with emphasis on appropriateness of meaning and forms and in this competence speaker knows to express meaning in terms of the person being addressed, setting and overall purpose of communication.

On the other hand, strategic competence refers ... “to the verbal and nonverbal communication strategies that may be called into action to compensate for communication breakdowns due to performance variables or due to insufficient competence” (Canale and Swain, 1980:30). Discourse competence refers to speakers’ mastery of combining meanings and forms to achieve unified text of messages during conversation through use of cohesive devices relating to utterance forms and coherence rules to organize meaning. It is pointed out here that this study focuses on strategic competence of engineering students that what kind of strategies they employ to overcome communication deficiencies during oral presentation when they encounter any communication problem. Thus, this study is framed around communicative competence of engineering students to perform various communicative tasks successfully following graduation at workplace.

It would be no exaggeration to say that communication strategies are an important aspect of any good oral presentation. Thus, it is necessary that communication strategies need to be taught to engineering students to prepare them skilled workforce for modern industry. No doubt, engineering students do not like oral presentations and they do not pay much attention on the subject of English or communication skills during study time. Wood (2009) studied effects of communication strategies on first year university students. He found that teaching communication strategies in class resulted increased understanding of strategies.

Unfortunately, despite significant importance of communicative competence for engineering students engineering universities of Pakistan mainly focus on grammatical competence of engineering students. In this perspective, communication skills courses taught to engineering students lack communicative competence and these courses specifically lack communication strategies that assist engineering students to perform oral communicative tasks at workplace for instance, oral presentations, discussions, conversations and client negotiations. It is all fine that engineering students need to possess grammatical competence, but strategic competence is highly needed to perform various communication tasks effectively at workplace. Powers and Lowry (1984) stated that communicative competence is an important aspect of successful organizations. This is because the most important jobs that managers and supervisors perform at workplace are related with communicative competence. Research has indicated that supervisors 50% to 90% of time spend communicating with people at workplace.

Stewart and Pearson (1995) investigated communication strategies in a negotiation task involving 8 native and nonnative speakers. Findings indicated that nonnative speakers used the skills of ‘appeal for assistance’, ‘appreciation’, ‘literal translation, and ‘self repair’ but native speakers did not use these strategies. Ansarin and Syal (2000) conducted a study on Iranian language learners to investigate frequency of strategies. Researchers found that Iranian language learners tended to use more conceptual analysis strategies compared to cooperation strategies. In another study Sattar Ansa et al. (2011) investigated “The linguistic needs of Textile Engineering Students: A case study of National Textile University” Pakistan. The results of the study indicated that engineering students wanted to learn English for academic and business purpose. Moreover, engineering students preferred to learn English focusing on communication strategies compared to grammar translation methods. The results of this study further indicated that teachers were found in favour of teaching methods that concentrate on grammar rules. Thus, this study shows that engineering students’ preferred communicative competence compared to grammatical competence. This study

focuses on strategic competence of engineering students that what kind of strategies they use when they face and communication problem during oral presentations. Thus, the results of this study would contribute towards existing literature on communication strategies of engineering students for workplace environment.

## **2. Methodology**

The research approach used for this study was based on qualitative methods in terms of recording of oral presentations. Recordings provided better understanding to explore communication strategies that engineering students to overcome communication problems.

### **2.1 Sample**

Twenty five (25) engineering students from 2 engineering universities of Pakistan participated in this study. Purposive sampling method was used. This is because respondents were selected on specific criteria of only final year engineering students. Purposive sampling helps researchers to select suitable respondents for the study (Creswell et al., 2007). The rationale for the selection of final year engineering students was based on the understanding that within six months these engineering students shall join the workplace. Thus, it was necessary to investigate communicative competence of these engineering students that how well they are prepared to function effectively at workplace following graduation.

### **2.2 Instruments**

The instruments used for this study were recording of oral presentations. The main participants for this oral activity were engineering students and there was no participation of this researcher except recording of presentations.

### **2.3 Participant Characteristics**

All participants were undergraduate final year engineering students. Their field of discipline was civil engineering and electrical engineering.

## **3. Data Analysis**

Data were analysed qualitatively but results were presented quantitatively in terms of percentages for each strategy employed by engineering students. Dornyei and Scott's (1995) compiled Inventory of Strategic Language Devices was used to explore communication strategies that engineering students employ to overcome communication deficiencies when they encounter any communication problem during oral presentations. It is worth mentioning here this inventory of strategic language devices of Dornyei and Scott's (1995) was not used in total in order to find out other strategies that emerge from the data. This inventory of strategic language devices that was used for this study was based on eleven selected communication strategies. These strategies were message abandonment, message reduction (topic avoidance), message replacement, circumlocution (paraphrase), use of all purpose words, restructuring, code switching (language switch), self repair, self rephrasing, self repetition and use of fillers.

## **4. Findings**

The research results provided valuable insights on communication strategies employed by engineering students during oral presentations. These findings are presented in terms of percentages for each strategy employed by engineering students during oral presentations to overcome communication deficiencies.

### **4.1 Communication Strategies employed by engineering students to overcome communication deficiencies**

The results of the study indicated that 8% engineering students used 'message reduction', 32% 'use of fillers' and 49% 'self repetition' (time gaining strategies) during oral presentations (Fig.1). In order to get better idea and easy understanding of the audience these communication strategies are presented as under:

#### **4.1.1 Message Reduction**

Five (5) engineering students out of 25 used this communication strategy. Thus, there were 7 (8%) instances of "message reduction" strategies employed by engineering students during oral presentations. In order to get better idea about 'message reduction' some examples are produced as:

Maximum voltage system is 500,220 and 132 kv *so on and so forth...* (OP2Engg. Std.2.8)

Renewable energy resources are used *everywhere*. (OP20Engg. Std.20.13)

But in Pakistan hopefully *we will do that* ... (OP20Engg. Std.20.25).

Education System is totally different here... *etc.* (OP21Engg. Std. 21.7)

Transmission line is insulator, conductor and *several others* (OP25Engg. Std. 25.11)

Excerpts from oral presentations indicate that engineering students employed “message reduction” (topic avoidance) strategy when they did not know what to say due to background knowledge of the topic.

#### 4.1.2 Self Repetition (time gaining strategies)

Twenty one (21) out of twenty five (25) engineering students employed 49 (53%) instances of “self repetition” strategies to gain time when they tried to talk about the next issue or topic. Some excerpts from presentations are presented for easy understanding of “self repetition” (time gaining strategies) as under:

*What is their what is their* existence and importance in our lives... (OP1Engg. Std.1.8)

*So with respect ...so with respect to* that speed whenever it gains... (OP3Engg. Std.3.13)

*Heat is not ...heat is not* much produced in the transformer... (OP4Engg. Std)

*By this by this* activity we have to enter the program... (OP11Engg. Std.11.17)

*If if* the load increases energy will decrease ... (OP20Engg. Std. 20.15)

Excerpts from oral presentations indicate that engineering students tried to solve communication problems by expanding their communication sources to overcome communication problems during oral presentations.

#### 4.1.3 Use of fillers

Sixteen (16) out of twenty five (25) engineering students employed “use of fillers” either to gain time or to fill pauses during oral presentations. On the other hand, engineering students employed fillers to gain time before starting a new sentence. Some examples from oral presentations are produced as:

*So*, the same concept is applied here... (OP1Engg. Std. 1.6)

*As we know* ...what we are doing primary supply from feeder ... (OP3Engg. Std. 3.16)

*Okay*, we are the men to provide comfort to the common people... (OP12Engg. Std.12.8)

*You know* how much current is ...in this ... (OP22Engg. Std.22.13)

In addition, engineering students used ‘fillers’ to fill pauses during oral presentations. Some excerpts are produced for easy understanding of use of fillers to fill pauses.

Why we need *aah aah* these transmission levels... (OP2Engg. Std. 2.8)

So very costly *aah aah* machine in the power system... (OP4Engg. Std. 4.11)

It is other thing *aah aah* how to attract the audience... (OP15Engg. Std.15. 13)

This type of ... has *aah aah* step down transformer... (OP19Engg. Std. 19.16)

It indicates that engineering students needed some time to think when they wanted to say the next word or to start a new sentence but they did not want to remain silent in order to interrupt the process of communication.

## 5. Discussion

The results of the study indicated that 8% engineering students employed ‘message reduction’ strategy during oral presentations. It indicates that engineering students employed ‘message reduction’ (topic avoidance) strategy when they did not know what to say due to background knowledge of the topic. The second communication strategy was ‘self repetition’ (time gaining) strategy and 49% engineering students employed this communication strategy during oral presentations. This shows that engineering students tried to solve communication problems by expanding their communication sources to overcome communication problems that they faced during oral presentations. On the other hand, the third communication strategy was ‘use of fillers’ and 32% engineering students used this communication strategy. Engineering students employed ‘fillers’ to gain time before starting a new sentence. In addition, they used ‘fillers’ to fill pauses during oral presentations. This indicates that engineering students needed some time to think when they wanted to say the next word or to start a new sentence but they did not want to remain silent to interrupt the on going communication process. It is quite surprising, although these engineering students are L2 speakers but they did not employ code switching strategy during oral presentations. The results of the study indicate that engineering students are not well familiar about use of communication strategies that assist them to overcome

communication deficiencies that obstruct their effective oral presentation performance.

## 6. Conclusion

Engineering students employed three communication strategies namely 'message reduction', 'self repetition' (time gaining strategies) and 'use of fillers. This seems quite surprising that although these engineering students are second language speakers (L2) but they employed few communication strategies during oral presentations. This shows that engineering students are not well aware about the use of communication strategies to perform effective oral presentations in academic and non academic settings such as at workplace following graduation. This indicates that communication strategies are not part of engineering curriculum taught to engineering students. Thus, they minimally used communication strategies to overcome communication deficiencies during oral presentations. It this perspective, it is suggested that communication strategies should be included in engineering communication skills curriculum and communication teachers should focus on strategic competence of engineering students to prepare them better engineers for the workplace. Communicative competence would assist engineering students to perform workplace jobs effectively according to employer and customer satisfaction. In addition, it will be helpful for engineering students join multinational organizations. Thus, if engineering students of Pakistan would join multinational organizations it will help the government of Pakistan to overcome increasing unemployment in engineering profession of Pakistan.

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### Biographical Notes

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### Appendix

#### Communication Strategies employed by Engineering Students to overcome Communication Deficiencies

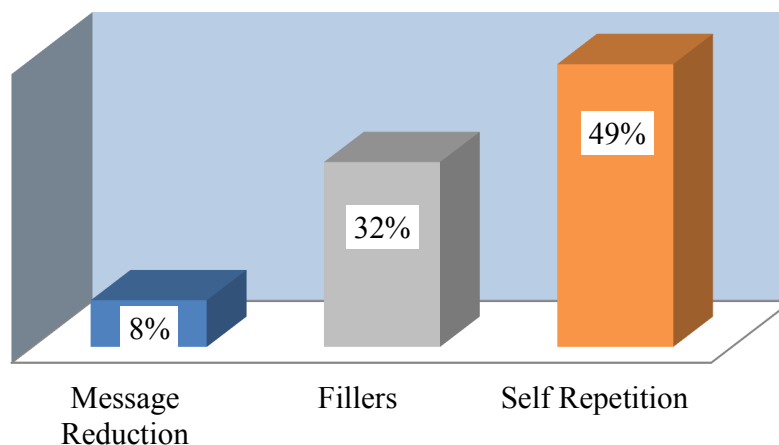


Figure 1: Communication Strategies employed by Engineering Students to overcome Communication Deficiencies during oral presentations

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