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Communication Barriers Among Undergraduate Engineering Students: Assignment Project

***Inayatullah Kakepoto*[1]**
***Abdullah Laghari* [2]**
***Tania Laghari*[3]**
[1]*Department of English, Quaid-e-Awam University of Engineering Science & Technology, Nawabshah*
[2]*Lecturer, Department of English, Quaid-e-Awam University of Engineering Science & Technology, Nawabshah*
[3]*Department of English, Shaheed Benazir Bhutto University, Shaheed Benazirabad*

Abstract

This study had twofold objectives first, it explored communication barriers of engineering students that impacted their communication performance and the reasons behind their communication barriers. Engineering students enrolled in communication skills course were drawn as respondents. Research instrument was open ended questionnaire. Eighty-three (83) undergraduate engineering students participated in this academic survey. Content analysis approach was implemented for data analysis. Findings show that 'lack of vocabulary, lack of confidence, language problem, hesitation, poor knowledge, poor preparation, stress, anxiety, poor listening skill, fear of criticism, confusion, poor interest, poor judgement, depression, technical jargon, poor perception and overloaded information' were communication barriers of engineering students. Moreover, the reasons of these communication barriers were lack of vocabulary, low confidence, hesitation, shyness, poor self-esteem, inferiority complex, fear of criticism, anger, poor language, stage fear, memory loss, poor environment, and peer pressure.

Keywords: Communication barriers, engineering students, undergraduate

1. Introduction

The success of an engineer depends on diverse skill set comprising technical and soft skills. This research focused communication barriers of undergraduate engineering students and reasons behind their communication barriers. Students enrolled in communication skills course were surveyed. Students had varied backgrounds i.e., public and private schools, and colleges. They had newly joined B. E degree engineering program and were facing various communication barriers. Communication becomes ineffective when students fall short sharing information and knowledge in academic and nonacademic settings. Communication barriers consist of multiple shapes such as

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linguistic, educational, psychological, and physical. This study focused engineering students' communication barriers and the reasons behind these barriers. It is a well-established fact that engineers' effective communication skills help them to join workplace jobs and then excel in job promotion ladder at industry. Employers demand effective communication skills of engineering students because engineers equipped with hard and soft skills perform better job and increase productivity of organization. More specifically, skilled engineers are an asset of modern industry.

Research Questions

(i) What are communication barriers of engineering students that hinder their classroom academic performance?

(ii) What are reasons behind communication barriers of engineering students of Pakistan?

2. Literature Review

Communication word is derived from Latin word 'communis' which means common or sharing of ideas in different settings. Communication is an act through which people share information, knowledge, ideas, feelings, perceptions, and problems with each other in this bleak and barren world. The best communication mode is a two-way process. Nonverbal communication (face lexes, gestures, postures), visual communication (images, pictures, paintings, photography), and electronic communication (mobile calls, emails, satellite transmissions) are communication channels. Human voice is first source of communication. The shrill cry of baby provokes attention of family members in a home environment. Later, people use complex mode of communication in shape of words, sentences and signs and symbols. Communication plays paramount role in personal and professional life of people. It builds strong work relationship, self-confidence, and solves problems ranging from personal and professional. Communication contains four skills i.e., listening, reading, writing, and speaking. Listening and reading act as receiving information hence, are called 'receptive

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skills. Speaking and writing produce words, phrases, paragraphs, sentences, speeches, and presentations so; are called 'productive skills. Listening is psychological process and requires full attention of receiver. Reading makes sense of words and sentences in true sense, just recognizing alphabetical letters is never true form of reading. Speaking is skill and art of presenting ideas in front of peers, teachers, and other audience in and outside of class environment. Writing is way of using words communicating ideas and thoughts in shape of poetry, prose, and newspaper articles.

Communication barrier is an element that blocks information sharing between sender and receiver. Various communication barriers exist in literature e.g., semantic or language barrier (bad expression, words containing different meanings, faulty translations, unclarified assumptions, denotations & connotations, technical jargons), interpersonal barriers (conveyed message may not be received as sent), fear of criticism (ridicule, laughing, mockery) if any student provided incorrect answer in class, psychological barrier (ego, prejudice, close mind, status, day-dreaming), physical barrier (poor listening skill, non-verbal communication, mental attitude, noise, time, distance), emotional barriers (anger, pride, anxiousness, distrust, fear, depression), perceptual barrier (values, attitudes, tone, volume), cultural barrier (etiquettes, mannerisms, behavior), stress (verbal, para verbal), low self-confidence (shyness, unpleasant infant experiences, poor academic performance, anxiety, worry, emotions). Kapur (2018) indicated that communication barriers, i.e., language barriers, physical barriers, emotional barriers, and poor subject knowledge result in poor communication. Irfan et al., (2020) stated that students ranging from rural parts of Pakistan are unable to share ideas. Students and parents desire effective speaking skills (Ahmad and Rao, 2013) because of its increasing importance in various fields of life. Anxiety is an affecting factor that deters students' language performance (Milan, 2019) and oral communication is a daunting task for students (Zheng, 2008). Engineering curricula focuses little attention

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on communication skills of engineering students and engineering universities of Pakistan still consider technical skills highly important. Communication skills is taught as a single entity in most of engineering universities of Pakistan. Engineering students need workplace skills and trainings (Task Force on Improvement of Higher Education in Pakistan, 2002). Communication barriers reduce job opportunities for engineers because, industry work environment has changed over the years, and they demand engineers with different skill set. Engineering education in Pakistan has received very little attention since 1947 (Mehdi and Rizvi, 2001). There is dearth of resources in engineering universities in terms of faculty, laptops, internet, and multimedia tools and classrooms are overcrowded. Freiberg (1998) said that classroom is a better place to develop student skills or barriers. Almeida, (2019) indicated that a gap between communication training and industry expectation exists. Communication competency of engineers includes job description, idea sharing, presentations, and proper communication medium use (Almeida, Becker & Villanueva, 2019). Nazia Hussain et al., (2021) explored communication barriers impact on student's achievements in the context of Pakistan and concluded that communication barriers badly hit student's academic performance. Shahida Naz et al., (2020) explored communication barriers of English language classroom and found that psychological, semantic, physical, content, and environment barriers affected English language classroom. Madhusudan et al., (2019) studied engineering students' competencies and found that 80-90% engineering students were under depression. Farooq (2011) studied job mismatch from three perspectives in Pakistan and found that academic institutions prepare graduates unfit for job competencies and skills. Mehra et al., (2013) said that communication skills play paramount role for employability of engineers i.e., oral communication skills, interpersonal skills, written communication skills, listening skills, and expressing ideas confidently. Jabeen (2011) surveyed mismatch between university students' perception and employer expectations about job skills and found differences between employer and

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students' perceptions regarding job skills. Mohamed et al., (2014) stated that oral communication skills bring advantage for engineers to perform workplace tasks and career advancement. Communicative performances i.e., e-mails, reports, memos; steering meetings, and presentations are part of engineering workplace (Spence & Liu, 2013).

3. Methodology

This study followed qualitative research method. Open-ended questionnaire was employed as research instrument. Qualitative data collection methods include observation, interviews, and document analysis. Purposive sampling method was implemented since only first year, second semester engineering students of computer systems and software engineering Quaid-e- Awam university of Engineering, Science & Technology Nawabshah were respondents. Research site was department of computer systems and software engineering departments. Eighty-three (83) undergraduate engineering students submitted assignments as part of assignment project. All participants were enrolled in communication skills course. Thirty-three (33) students provided specific answers of R.Q.1 and eight (8) for R.Q.2. However, the rest of the students provided general answers to research questions which did not reflect their personal barriers and the reasons behind them. Data were analyzed using observation method and content analysis approach.

4. Study Findings

Research Question 1 findings are presented as under:

Part I- Communication Barriers of Engineering Students

Table: 1. Computer Systems Engineering Students Communication Barriers

Student Code	*Department*	*Type of Communication Barriers*

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CS: 1	Computer Systems Engineering	Lack of vocabulary, Lack of confidence, Hesitation
CS: 3	Computer Systems Engineering	Lack of knowledge, Poor listening skill, Lack of vocabulary
CS: 15	Computer Systems Engineering	Lack of vocabulary, Poor confidence, Hesitation
CS: 16	Computer Systems Engineering	Hesitation, Poor speaking skill, Language barrier, Fear of criticism, Low self confidence
CS: 21	Computer Systems Engineering	Anxiety
CS: 22	Computer Systems Engineering	Lack of knowledge, Poor listening skill
CS: 25	Computer Systems Engineering	Lack of knowledge, Poor listening skill, Lack of vocabulary
CS: 33	Computer Systems Engineering	Lack of confidence, Language problem, Confusion
CS: 45	Computer Systems Engineering	Low confidence, Poor vocabulary
CS: 4, 28, 31, 11	Computer Systems Engineering	Hesitation, Stress, Anxiety
CS: 7, 27, 31, 34, 35	Computer Systems Engineering	Poor confidence, Lack of knowledge, Poor preparation

Table 1 speaks about nature of communication barriers that affect communication barriers of engineering students.

Table: 2. Software Engineering Students Communication Barriers

Student Code	*Department*	*Type of Communication Barriers*
SW: 2	Software Engineering	Language barrier, Poor listening skill, Mental attitude, Stress, Low self-confidence

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SW: 4	Software Engineering	Language problem, hearing problem, Lack of confidence, Fear of audience laughing, Different communication styles, Overloaded information
SW: 6	Software Engineering	Linguistic barrier, Attitude barrier, Lack of attention, Environmental barrier, Stage fear
SW: 7	Software Engineering	Language barrier, Emotional barrier
SW: 10	Software Engineering	Language barrier, Attitude barrier
SW: 11	Software Engineering	Emotional barrier, Attitude barrier
SW: 17	Software Engineering	Lack of knowledge, Lack of vocabulary, Fear of criticism, Low self-esteem, Lack of interest, Poor judgement, Fear, Anger
SW: 19	Software Engineering	Language Barrier, Poor self-esteem.
SW: 35	Software Engineering	Lack of confidence, Lack of knowledge, Lack of vocabulary
SW: 36	Software Engineering	Language barrier, Attitude barrier, psychological barrier
SW: 37	Software Engineering	Lack of attention, Anger, Negative self-image, Fear, Poor listening, Information overload, Academic barrier, Language barrier, Over confidence
SW: 38	Software Engineering	Less confidence, Differing communication styles, Confusion
SW: 39	Software Engineering	Lack of attention, Differences in perception, Language problem

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SW: 44	Software Engineering	Language barrier, Low self-confidence, Fear of criticism, Poor interest, Dreaming, Poor listening skill, Stress, Poor perception, technical jargon, Assumptions
SW: 47	Software Engineering	Sematic barrier, Fear of criticism, Poor listening skill, Noise, Fear, Distrust, Depression, Anxiousness, Stress, Low self-confidence, Poor self-image

Table 2 provides description of reasons behind communication barriers of engineering students

Part II- Reasons behind Communication Barriers of Engineering Students

Research Question 2 finding excerpts are presented as under:

> I think the main factor which affect my communication performance is lack of vocabulary. If we have not suitable storage of words, we can't coney our thoughts, feelings, information and other useful knowledge properly. I believe confidence speaks louder than words. Sometimes we are speaking or also in listening do not convey our point confidently to other. I feel less confidence on my thoughts that they might be wrong that's why I feel low self-confidence. Sometimes I feel uncertainty or doubt which causes the pause in my speech and affect my communication performance. **[CS15]**

> I think hesitation is one of the factors that decreases my communication skill. Because I face hesitation and do not come forward on dice in front of group of people in any place as school and university. It is hesitation due to which I cannot communicate properly. **[CS 4,11]**

> First is low confidence, if teacher asked for presentation, I feel shy and avoid from it. I don't have low vocabulary. I always dare to come on stage but if I stood up

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the brain pushed me back, at stage my legs are shivering from presentation. I always try to give my best but I always fail. **[CS 45]**

"Hesitation is a barrier for me that affects me while presenting a speech in classroom. When I get start the speech in between I get hesitated and do not continue to present properly" **[CS 28]**.

"Communicating with people whose native language is not English pose language problem for me. Poor self-esteem or inability to make connections with others can prohibit us from communicating with our colleagues. **[SW19]**

I am suffering from inferiority complex and have a victim mentally sometimes I feel like I hate myself and everybody hates me too and just they are faking to me. When I have less knowledge about the subject then it affects my communication. Seriously, when my friend uses difficult words then problem arises. I don't know but it is very hard for me to face criticism. Criticism creates inferiority complex in me, that's why I guess I am afraid of criticism. I want to add this because I don't have control over my anger and emotions. As we know anger affect the way your brain process information and it also stops me to listen point of view of others so I think it is affecting my communication performance. Sometimes a sudden feeling comes that your opinion does not matter in this conversation or in this place or that people will negatively judge me as I mentioned earlier. **[SW17]**

Language and linguistic ability act as a barrier to communication. For me there are two language barriers firstly there is an issue of proper usage of words while communication sometimes I mind up with more than one language so it makes confusion in selection proper of words. I speak more than four languages in a day with different people so due to listening or speaking many languages makes communication barriers. My barriers which I have experienced yet are stage fear

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and speech disorder and I also face issue of memory loss sometimes while speaking on stage I miss the points about the topic. I have faced some communication barriers due to environment in which I am living for example I am afraid of communicating with my classmates or teacher, while communicating I had fear that if I speak or communicate in broken language so they notice and may make fun of mine, because its normal thing making fun of others in an environment where I live. **[SW 6]**

When I come on the stage in front of my class fellows, I feel pressurized, no confidence on topic and forget many points because of barriers. I feel fear from audience. **[SW35]**

5. Discussion

Research Question 1 findings showed that 'lack of vocabulary, lack of confidence, language problem, hesitation, lack of knowledge, poor preparation, stress, anxiety, poor listening skill, fear of criticism, confusion, poor interest, poor judgement, depression, technical jargon, poor perception, and overloaded information' were potential communication barriers of engineering students that impacted their classroom communication performance. Research Question 2 findings exhibited various reasons behind communication barriers of engineering students for instance; 'lack of vocabulary, low confidence, hesitation, shyness, poor self-esteem, inferiority complex, fear of criticism, anger, poor language, stage fear, memory loss, poor environment and peer pressure'. Study findings are in line with literature review studies of other researchers for instance (Nazia Hussain et al., 2021; Shahida Naz et al., 2020; Madhusudan et al., 2019; Mehra et al., 2013; and Mohamed et al., 2014). It is a fact that engineering students of Pakistan face communication barriers over the years and they cry about these barriers in classrooms. Engineering students always ask a question from language teachers how to overcome these communication barriers. Engineering students are always anxious to

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know certain tools, techniques and strategies to overcome their communication barriers. They realize that communication barriers affect their academic class performance and the same they shall face in professional life ahead as part of modern industry. In this context, Engineering universities of Pakistan should come forward and formulate certain strategies that help engineering students to acquire industry skill set from these academic nurseries. It has been observed that majority of engineering universities of Pakistan offer single subject of communication skills to engineering students during four-year B.E engineering degree program. Thus, communication teachers find it very hard to teach four skills of communication in one subject of communication skills. As a result, engineering students are poorly prepared in communication skills. On the other hand, engineering universities have to change this old-fashioned approach that only technical skills guarantee engineering students success at industry. They should survey industry and look at required skills needed in modern industry. Engineering curriculum taught to engineering students should be updated and employability skill course contents should be added to meet demand of local and global industry. By doing so, engineering universities will help Government of Pakistan to overcome growing unemployment in engineering profession of Pakistan. It is important to mention that engineering graduates equipped with effective industry skill set join multinational companies around the globe and contribute to economic stability of Pakistan.

6. Conclusion

The findings of this research demonstrated that engineering students of Pakistan faced multiple communication barriers due to multiple reasons. Therefore, the located barriers need to be addressed to prepare them better engineers for modern industry. For this purpose, the engineering universities of Pakistan should add more communication skill courses in existing engineering curricula. It shall train them in skills needed in engineering jobs. It is a well-known fact that modern industry needs engineering graduates equipped with effective soft and hard skills. Hence, if engineering students of

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Pakistan lack behind in effective communication skills, then it is possible they lose good job opportunities in local and global industry market. In this perspective, there is a dire need to ameliorate surveyed communication barriers of engineering students. It shall assist them to perform better jobs and play role decrease unemployment in engineering profession of Pakistan in coming years ahead.

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References

Ahmad, S., & Rao, C. (2013). Applying communicative approach in teaching English as a foreign language: A case study of Pakistan. *Porta Linguarum*, *20* (1), 187-203.

Almeida, L. M. d. Z. (2019). Understanding industry's expectations of engineering communication skills (Doctoral dissertation): Utah State University, Utah.

Almeida, L. M. d. Z., Becker, K. H., & Villanueva, I. (2019). Board 40: Understanding industry's expectations of engineering communication skills.2019 ASEE Annual Conference & Exposition.

Farooq, S. (2011). The Utilization of Education and Skills: Incidence and Determinants among Pakistani Graduates. *The Pakistan Development Review*, 50 (3).

Irfan, F. Khan, A. Malik S. (2020). Challenges in Teaching and Learning of English at Higher Secondary Level: The Perceptions of Teachers in Lahore. *Talent Development & Excellence 12*, (1).

Jabeen, T (2011). An Appraisal of Mismatch between Graduating Students' Perception and Employers' Expectations Regarding Employability Skills. Thesis: University of Gujrat, Pakistan.

Kapur, R. (2018). Barriers to effective communication. Delhi University.

Madhusudan. K. S, Harihara Sudhan. R. (2019). In competencies among engineering students as an antecedents in stress among engineering students in around Chennai. *International Journal of Recent Technology and Engineering 8*, (1).

Mehra, D., & Virgandham, V. (2013). Communication skills for enhanced employability of engineers: A review of literature. *The Confluence Journal 3*, pp. 70-76.

Milan, M. (2019). English speaking anxiety: sources, coping mechanisms, and teacher management. *International Journal of Teaching, Education, and Learning*, 3(2).

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Mohamed, A. A., Radzuan, N. R. M., Kassim, H., & Ali, M. M. A. (2014). Conceptualizing English workplace communication needs of professional engineers: The challenges for English language tertiary educators. *International Journal of Contemporary Business Management, 1*(1), 1-9.

Nazia H., Noor M., Mudassar Y (2021). Analysis of the effects of communication barriers on student's achievements at the university level. *Journal of Education and Social Studies, 2*(1), 15-19.

Naz, S., Hussain, Z., & Adnan, M. (2020). Communication Barriers in English Language Classroom: A Study of Teachers' Perceptions in Pakistan. *Global Language Review, 5*(3), 68-76.

Shahbaz, M. (2012). A study of motivational factors for English language learning in Pakistan: A socio-contextual perspective. Unpublished doctoral dissertation, Northeast Normal University Changchun Jilin P.R. China.

Spence, P., & Liu, G. (2013). Engineering English and the high-tech industry: A case study of an English needs analysis of process integration engineers at a semiconductor manufacturing company in Taiwan. *English for Specific Purposes, 32*, 97-109.

Zheng, Y. (2008). Anxiety and second/foreign language learning revisited. *Canadian Journal for New Scholars in Education, 1*(1), 1-12.