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EVALUATING THE RELATIONSHIP BETWEEN INTERCULTURAL COMMUNICATION COMPETENCE AND ENGLISH-SPEAKING PROFICIENCY AMONG FINAL-YEAR ENGINEERING STUDENTS IN PRIVATE TECHNICAL INSTITUTES OF DELHI NCR

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ABSTRACT

The study examines the importance of intercultural awareness and communication competence in determining the ability of students to communicate in English and confidence in speaking in professional situations. Quantitative research method was taken with descriptive and exploratory research approach. A structured questionnaire was used to collect primary data with the help of purposive sampling on 200 final year engineering students. The statistical methods used to analyse the data included statistical and mean, standard deviation, correlation, regression analysis and paired sample t-test with the help of SPSS and MS Excel. The findings indicate that students have moderate intercultural awareness and "English-speaking proficiency" and positive and statistically significant correlation was found between intercultural awareness and "English-speaking proficiency". Regression analysis also suggests that intercultural communication competence plays an important role that determines confidence and effectiveness of students in professional speaking cases though some students still face some problems in implementing intercultural competence in spoken communication. The results indicate that the combined intercultural training in communication with English language training may be used to increase the confidence of students in communication and their professional preparedness. The study concludes that both the intercultural competence and the English-speaking proficiency of the engineering graduate need to be strengthened in order to enhance the global employability and professional communication skills.

KEYWORDS: Intercultural Communication Competence, English-Speaking Proficiency, Engineering Students, Intercultural Awareness, Global Employability

1. INTRODUCTION

The growing globalization of education and employment has necessitated the fact that intercultural communication competence (ICC) and English-speaking proficiency among graduates of engineering is important. In modern workplace settings, engineers have to work with their peers, customers and stakeholders of different cultures and languages. Consequently, the technical knowledge is no longer an adequate requirement; the students are expected to have the skills to exchange information effectively across cultures as well (Srinivas 2023). In India, especially in major urban areas like Delhi NCR, the goal of the private technical institutes is to equip the students of engineering to opportunities that may arise across the world where English is the main language of professional interaction (Mapaling et al., 2024). Thus, it is important to consider how the intercultural communication competence and English-speaking proficiency are interrelated to assess the extent to which these students will be able to work in the world markets (Sarwari et al., 2024).

The competence of intercultural communication can be defined as the capability of the individual to communicate with the people of other cultural orientations in an appropriate and proper way. It is sensitivity to cultural differences, willingness to learn different viewpoints, flexibility of communication patterns, and openness to cultural signals and reacting (Handford et al., 2019). In the case of engineering students, ICC is essential in academic cooperation, international exposure and involvement in multinational working environment. Once students acquire intercultural sensitivity and awareness, they will become more assured in their communication particularly in a common language like English. This competence will enable them to communicate the ideas effectively, accept the opinion of others, and have a significant conversation despite the cultural differences (Riemer 2022).

English speaking proficiency on the other hand is a commonly known skill area of employability among the engineering graduates in India. Numerous multinationals and other international research projects and technological infrastructures are based mainly on the English language (Bryntseva and Podorozhna 2023). Students of final-year engineering are on the eve of entering the professional environment, which is why they are supposed to demonstrate good verbal communication skills in English during the interviews, presentations, and team discussion, as well as their interaction with colleagues at the workplace (Golikova and Tarasova 2023). However, not only grammar or vocabulary can make one skilled in English-speaking, but also the skill of self-confidence in communication, learning various accents, and varying in language utilization depending on cultural and professional backgrounds (Owens and Hite 2022).

The intercultural communication competence and the English-speaking proficiency tend to reinforce each other. The students with a higher intercultural awareness tend to be more relaxed in their approach to communicating with other people of other cultural backgrounds and have more chances to exercise and perfect their English-speaking skills (Darasawang and Reinders 2021). Having different cultural views helps the learners to be active listeners, to change their approaches to communication, and surmount language obstacles. Subsequently, enhanced expertise in English speaking will, in its turn, allow them to engage in intercultural communication more efficiently, which will lead to an ongoing loop of improvement in the two domains (Xiuwen and Razali 2020).

The case of privately owned technical institutes in the area of Delhi NCR is especially pertinent regarding the analysis of this relationship since such facilities attract students representing different regions, speaking different languages, and living in different cultural contexts within the country. This kind of diversity establishes a natural setting of intercultural communication both in classrooms, laboratories, and extracurricular activities (Sharma & Kandari 2021). The study addresses the development of cultural competence in English-speaking proficiency, therefore, contributing to the overall knowledge of global employability (Kashiramka et al., 2021). They can also inform educators and institutional policymakers to develop academic programs and language training courses and intercultural learning programs to better prepare engineering graduates, when working in international professional settings (Sharma and Kandari 2021).

The other significant aspect on the analysis of the IC competence and English-speaking proficiency is the influence of academic and social learning settings in developing student communication skills. The opportunities that are frequently offered by the private technical institutes in the Delhi NCR are group projects, seminars, workshops, and industry interactions in which the students are expected to cooperate with peers of other cultural and linguistic backgrounds (Kausar 2025). Such interactions provide natural settings where students can practice intercultural communication through the use of a

common medium which is English. By continually being involved in these kinds of environments, students become over time confident in the manner in which they express ideas, negotiate meanings, and engage in discussions. This action aids them to become more sensitive interculturally and to communicate effectively in English which is the key to professional success (Renaldo et al., 2025).

In addition, intercultural communication competence can also be developed to considerably affect the adaptability of students in international working environments. Graduates have become involved in multinational teams in which they often have to communicate effectively, and in this situation, it is necessary not only to be technically clear, but also to understand the culture (Chen 2024). With the increase of the intercultural competence, students are more likely to decode cultural differences, prevent misunderstandings, and establish positive working relationships. Together with good English-speaking proficiency, such skills would allow graduates to become more engaged in international cooperation, sharing of knowledge, and innovation (Xu et al., 2025). Hence, the analysis of the interrelation between the two competencies is a good way to gain an understanding of how higher education can equip engineering students with the need to operate in an increasingly globalized society (Sokol 2025).

1.1. Aim and objectives of the Study

The main purpose of the study is to analyse the relationship between "intercultural communication competence and English-speaking proficiency" among the final year engineering students of privately owned technical institutes of Delhi NCR. The study aims at learning how the intercultural awareness, flexibility and cultural diversity responsiveness determine the capacity of students to communicate well in English. Also, the study focuses on examining the importance of intercultural communication competence in promoting confidence and performance of students when speaking English in academic and professional settings. In that way, the study will aim to determine whether the increased level of IC results in the enhanced communication skills of the engineering students. The study is meant to offer information that can assist the learning institutions to fortify language training and intercultural learning programs. This will contribute to the achievement of communication skills that will make engineers graduates more employable across the world. The following objectives were covered in the study:

- To examine the relationship between intercultural awareness and English-speaking proficiency among final-year engineering students.
- To analyze the influence of intercultural communication competence on students' confidence and effectiveness in professional speaking contexts.
- To identify the major challenges faced by engineering students in demonstrating intercultural competence during spoken communication.

2. LITERATURE REVIEW

Theme 1: Importance of Intercultural Competence in Engineering Education and Global Employability

The intercultural competence has been becoming a mandatory part of the engineering education because of the globalisation of the labour market and the increased necessity to work together across the national and cultural boundaries. One study, by Rico-Garcia and Fielden Burns (2020) points out that engineering graduates are not only supposed to be knowledgeable in terms of their skills but also be good communicators towards people of different cultures. In their experimental research carried out in Spain, engineering students who, nevertheless, were trained in intercultural competencies showed, much better performance in the intercultural communication evaluated tests than the students who were not trained in intercultural competencies. The study explains that intercultural content in engineering programs helps students to be mindful of various cultural disparities and enhances their competence in operating in a global line of work. This is why Rico-Garcia and Fielden Burns (2020) stress that higher education institutions have become particularly important to train engineering students to work in global environments where they have to interact with people of other cultures on a regular basis. Internationalization of science, technology and professional collaboration is on the rise which has intensified the significance of intercultural competence among engineers. According to Valeeva, Ziyatdinova, and Oleynikova (2020), engineers are often involved in international research and academic exchange and multinational industrial cooperation that presupposes the necessity to communicate and collaborate with people of another cultural setting. Their study on international practices, especially in the Chinese universities, proves that the institutions have employed strategic tools, including intercultural training courses,

international relationships and academic mobility programs as a way of developing intercultural competence in engineer students. Valeeva et al. (2020) suggest that these mechanisms allow the students to develop cultural awareness, communication skills, and adaptability that are key to the successful engagement in scientific and technological communities on the global arena. On the same note, intercultural competence has been identified as a significant professional skill that would allow engineers to co-work in the multinational workplaces. According to Drobot (2022), the necessity to use foreign languages, especially English, as a global language of communication and intercultural interaction, is becoming more and more accepted by engineering students. The study underlines that the engineering graduates often have to interact with colleagues, clients, and partners of other cultural and organizational backgrounds, so intercultural awareness is one of the most important professional qualities. The author also points out that intercultural communication should be integrated in language learning courses so that the engineering students could achieve linguistic and cultural competency (Drobot, 2022). Such integration will give students the capacity to understand cultural norms through the negotiation of meaning in the global environment and the creation of efficient working relations.

Theme 2: Role of Language Proficiency in Developing Intercultural Communicative Competence

The understanding of language is also considered as one of the premises which make intercultural communicative competence develop. According to a study carried out by Feng, Aziz, and Syarizan (2024), it is seen that learners who have better English language proficiency will have better intercultural communication skills. Their mixed-method research of English as a "Foreign Language students" found that language competence has a positive outcome on various aspects of intercultural competence such as attitudes towards cultural diversity, communication proficiency and intercultural awareness. Feng et al. also (2024) note that statistical analysis revealed that intercultural competence was significantly different in the learners with different degrees of language proficiency. The study proposes that the language

competence acts as an initiator of making the learners interact better and more confidently in intercultural exchanges. The intercultural competence and language competence correlation has also been discussed in the broad-based linguistic perspective. In their study, Wang, Wang and Wei (2025) evaluated the impact of the foreign language proficiency and national language proficiency on intercultural communicative competence. Their result shows that being proficient in the foreign language and especially in English is a good predictor of intercultural competence. Wang et al. (2025) also show that the relevance of national language proficiency to intercultural communication skills is not as dominant as foreign language proficiency is to the capacity of people to communicate effectively in an international environment. This study hence recommends a wholesome view of language teaching that provides more than one linguistic skill to enhance the intercultural communication skills.

Along with enabling the process of intercultural interaction, language learning itself may become a good avenue to intercultural competence development. As it is shown by Kozlovska, Kostyrya, Biletska, Shevchenko, Lastovskyi, and Mishchenko (2022), the instructional approaches that incorporate cultural content in addition to language teaching have a significant positive impact on the level of the English communication skills and intercultural awareness of the students. They find that exposure to actual English media, involvement in intercultural dialogue, and contact with international peers are some of the activities that lead to development of intercultural communication skills. Another important point that is made by Kozlovska et al. (2022) is the fact that successive integration of various instructional tools, including reading literature, watching movies, and direct communication, yields the best results. Such results indicate a high level of interdependence between the language competence and the intercultural communication skills.

Theme 3: Pedagogical Approaches and Learning Environments for Developing Intercultural Communication Skills

Teaching techniques and school setting are very vital in promoting inter-cultural communications among students of engineering. The study by Fleming, Coulter, and Chen (2024) focuses on the experiences of the domestic and international engineering students with regard to the English language proficiency and cross-cultural communication in the context of collaborative learning. The study finding shows that the perceptions of students in relation to language proficiency and institutional support has a great impact on academic participation, social integration, and teamwork experiences. As Fleming et al. (2024) note, engineering education is quickly becoming more dependent on collaborative learning and group projects and is subjected to students of various

cultural backgrounds that have to inter-relate effectively. They suggest that inclusive educational settings that promote social interaction and cross-cultural cooperation may be used to a significant extent to address intercultural communication skills and general learning experience of students. Exchange opportunities and international mobility programs have also been considered to be good avenues of intercultural competence development. According to Vodovozov and Raud (2020), attending an international exchange program enables students of engineering to engage in the unfamiliar linguistic and cultural setting, which, in turn, will further their cultural awareness and language skills. But the study also puts forward a number of intercultural obstacles that can get in the way of ensuring that such experiences are as beneficial to students as they can be, such as language challenges, lack of engagement with the local people, and cultural ill intent. Vodovozov and Raud (2020), thus, mention the necessity to revise educational modules and implement the preparatory training that would allow students to overcome these obstacles and achieve the full potential of intercultural learning of mobility programs. Besides, the construction of special courses based on the combination of language learning with intercultural communication has become a significant pedagogical tool in engineering education. The Janenoppakarn and Rajprasit (2025) designed an online course to study the English language in the context of intercultural communication, and the course is named the Engineering English to Intercultural Communication this course is designed to help the students who study engineering to be prepared in terms of communicating in the multicultural workplace setting. Their analysis shows that the course has been structured on the data obtained on students, engineering professionals, and academic staff members to make sure that the curriculum meets the practical communication requirements. As explained by Janenoppakarn and Rajprasit (2025), this kind of curriculum development guided by stakeholders can make educational programs meet both linguistic and intercultural competencies that are needed in the contemporary engineering profession. The study thus presents the importance of incorporating professional expectation, language education and intercultural communication training in the field of engineering education.

3. RESEARCH GAP

Despite the importance of the intercultural communication and language competence in engineering education as emphasized in existing literature, there are certain gaps in the existing literature. Study like Rico-Garcia and Fielden Burns (2020), and Valeeva et al. (2020) primarily concentrate on institutional approaches and training interventions towards developing intercultural competence while study by Feng et al. (2024) and Wang et al. (2025) concentrate on the connection between language proficiency and intercultural communicative competence in the general educational setting in general. Nevertheless, little has been done to comprehend the nature of intercultural communication competence development among engineering students in specific learning environments based on disciplines. Besides, although the literature and scholarships like Fleming et al. (2024), Vodovozov and Raud (2020) and Janenoppakarn and Rajprasit (2025) present concepts of collaborative learning, mobility programs and special courses, not all scholars provide background information about their perceptions, experiences, and attitudes toward intercultural communication skills and their future application in professional interactions. Thus, the appropriate way to fill this gap is to explore the interaction between language competence, intercultural communication competence, and engineering educational contexts, especially, with the emphasis on the perspective and experience of students to comprehend how the specified competencies can be incorporated into engineering schools and train graduates to work in multicultural professional environments.

4. RESEARCH METHODOLOGY

Research methodology is the systematic and theoretical examination of the methods and strategies utilized in a particular field of study. It acts as a blueprint for research, defining how data is identified, collected, and analysed to ensure results are credible, valid, and reliable (Goundar 2012).

4.1. Research Design, Method, and Sampling

The research design was a quantitative research design that included descriptive and exploratory research to study the relationship between "intercultural awareness, intercultural communication competence, and the English-speaking proficiency" of the students. The research problem focused on the city of Delhi NCR, India, and the population surveyed comprised the final year engineering students in the area attending privately owned technical institutes. The respondents who met the study requirements were selected through a purposive sampling method. The number of

respondents, 200 students, was deemed sufficient for statistical analysis and the research of the hypotheses.

4.2. Data Collection, Variables, and Statistical Tools

The study utilized both primary and secondary data. A close-ended structured questionnaire had been used to collect primary data, while books, journals, and research articles had been utilized to obtain the secondary data. Intercultural awareness (H1) and intercultural communication competence (H2 and H3) served as the independent variables. The dependent variables included English speaking proficiency (H1), student confidence and effectiveness (H2), and challenges (H3). The analysis of the data had been performed in MS Excel and SPSS 27 with the application of statistical methods of "Mean, Standard Deviation, Correlation, Regression, and Paired Samples t-test".

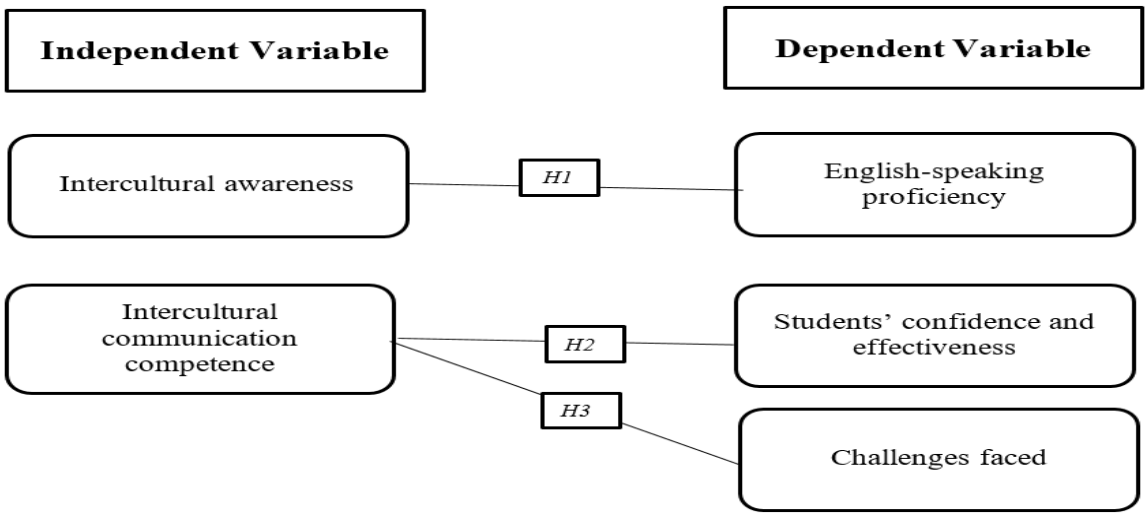

Figure 1: Construct reliability and validity

5. ANALYSIS AND INTERPRETATION

Table 1: Demographic Characteristics of respondents

S.NO.	Demographic Characteristics		N	%
1	Gender	Male	91	45.50%
		Female	109	54.50%
2	Age Group	20 years or below	49	24,5%
		21–22 years	47	23.50%
		23–24 years	39	19.50%
		Above 24 years	65	32.50%
3	Engineering Streams	Computer Science	31	15.50%
		Mechanical Engineering	38	19%
		Civil Engineering	43	43%
		Electronics Engineering	49	49%
		Artificial Intelligence	39	19.50%
4	Type of Private Technical Institute	Deemed University	64	32.50%
		Private University	71	35.50%
		Affiliated Private Engineering College	65	32.50%
5	Interaction with Different Cultural Backgrounds	Never	38	19%
		Rarely	37	18.50%
		Sometimes	42	21%
		Often	41	20.50%
		Very Frequently	42	21%
6	Exposure to English Communication	Very Low	33	16.50%
		Low	48	48%
		Moderate	41	20.50%
		High	48	24%
		Very High	30	15%

The demographics of the respondents gives a picture of the history features of the 200 final-year engineering students that were incorporated in the study. Gender wise, there were 91 (45.50) males and 109 (54.50) females, which means that there was a little more female student in the sample. Concerning the age group, the most significant percentage of students was among those of the above 24 years' category (65 respondents; 32.50%), then 20 years or below (49 respondents; 24.50%), 21- 22 years (47 respondents; 23.50%), and 23-24 years (39 respondents; 19.50%). Regarding the engineering streams, the respondents were spread in other fields, such as Computer Science (31; 15.50%), Mechanical Engineering (38; 19%), Civil Engineering (43; 21.50%), Electronics Engineering (49; 24.50%), and Artificial Intelligence (39; 19.50%), which implies that a variety of academic representation was achieved. Concerning institutional affiliation, 71 students (35.50 percent), 64 students (32.50 percent) and 65 students (32.50 percent) belonged to individual private universities, deemed universities and individual affiliated private engineering colleges respectively. Regarding the intercultural exposure, students reported having contact with the other cultural backgrounds in different proportions with most students using the "Sometimes" (21%) and the very frequent (21%) responses. On the same note, the levels of exposure to the English language were different among the respondents with the majority reporting moderate and high levels of exposure; this means that a good percentage of the engineering students constantly have to deal with English both academically and socially.

5.1. Outcomes based on objectives

Objective 1: To examine the relationship between intercultural awareness and English-speaking proficiency among final-year engineering students.

H1: There is a significant relationship between intercultural awareness and English-speaking proficiency among final-year engineering students of private technical institutes in Delhi NCR.

Table 2: Descriptive Statistics Table

Descriptive Statistics			
	Mean	Std. Deviation	N
Intercultural awareness	10.8700	2.58000	200
English-speaking proficiency	9.3550	2.98219	200

The descriptive statistics will give an approximate picture of the mean levels and the variability of the main variables measured by the study among the 200 respondents. The intercultural awareness score is 10.87 with a SD of 2.58, which means that the end of the-year engineering students is moderately to fairly high in the awareness of cultural differences and intercultural interaction. The standard deviation is rather moderate, and it indicates that the responses are rather similar, and most of the students are characterized by the same degree of intercultural awareness. Comparatively, the mean mark of English-speaking proficiency is 9.35 and a standard deviation of 2.98, and it indicates a moderate speaking proficiency level among the respondents. The standard deviation value is slightly larger, which means that the range of English-speaking skills of students is larger, and, therefore, some students have good speaking skills, whereas others may have some problems with communicating effectively in English.

Table 3: Correlations Table

Correlations			
		Intercultural awareness	English-speaking proficiency
Intercultural awareness	Pearson Correlation	1	.175*
	Sig. (2-tailed)		.013
	N	200	200
English-speaking proficiency	Pearson Correlation	.175*	1
	Sig. (2-tailed)	.013	
	N	200	200
*. Correlation is significant at the 0.05 level (2-tailed).			

The correlation analysis will discuss the interconnection that exists between IA and ESC among the respondents. The findings show that there is a positive Pearson correlation coefficient of 0.175 between IA and ESP and the variables have a weak but positive relationship. This means that the more interculturally aware students are the better they show slightly more proficiency in the English language. The significance level ($p = 0.013$) is lower than the 0.05 level which shows that the relationship to be true and not because of mere coincidence. The fact that the correlation strength is not very high,

however, the observation still indicates that intercultural awareness can be useful in helping students in their capacity to communicate effectively in English. Hence, the findings will support the notion that better knowledge of cultural distinctions and intercultural communication might help in enhancing English-speaking competence among final-year engineering students in private technical institutes of the Delhi NCR.

Objective 2: To analyze the influence of intercultural communication competence on students' confidence and effectiveness in professional speaking contexts.

H2: Intercultural communication competence significantly influences students' confidence and effectiveness in professional speaking contexts among final-year engineering students.

Table 4: Model Summary Table

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.495[a]	.245	.241	2.10353
a. Predictors: (Constant), Intercultural communication competence				

The model summary shows the findings of the regression analysis that will look at how intercultural communication competence affects confidence and effectiveness of students in professional speaking environment. The trends of the CC ® value of 0.495 prove that there is a moderate positive interaction between inter-cultural communication competence and the DV. The value of R square is 0.245, which implies that intercultural communication competence can account for about 24.5 percent of the change in the levels of confidence and effectiveness of students in professional speaking situations. The adjusted R square parameter of 0.241 also supports the fact that the model accounts the additional 24.1 percent of variance when sample size and predictors are adjusted. As well, the standard error of the estimate is 2.10353, which is the average deviation of the values observed about the regression line. All in all, these findings indicate that intercultural communication competence can have a significant impact on student confidence and effectiveness in professional speaking contexts but other variables not establish in the model might also cause the effects.

Table 5: ANOVA[a] Table

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	283.859	1	283.859	64.151	.000[b]
	Residual	876.121	198	4.425		
	Total	1159.980	199			
a. Dependent Variable: students' confidence and effectiveness						
b. Predictors: (Constant), Intercultural communication competence						

The results of ANOVA assess the overall significance of the regression model that assesses the impact of intercultural communication competence on the confidence and effectiveness of students in the professional speaking situations. The results indicate that the regression model is statistically significant, and the F value is 64.151 and the level of significance is 0.000, which is lower than the typical level of 0.05. This implies that the independent variable is a significant predictor of the dependent variable and the model is a good fit to the data. The regression sum of squares (283.859) is the amount of variation that intercultural communication competence is able to explain and the amount of variation that is not explained is referred to as the residual sum of squares (876.121). The results are that the intercultural communication competence is a major factor in determining the confidence and effectiveness of students speaking professionally among final-year engineering students because the significance value is very high.

Table 6: Coefficients[a] Table

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.632	.625		7.416	.000
	Intercultural communication competence	.477	.060	.495	8.009	.000
a. Dependent Variable: students' confidence and effectiveness						

The table of coefficients shows the contribution that intercultural communication competence makes individually in predicting the confidence and effectiveness of students when they are in

professional speaking situations. The value (B = 4.632) represents the level of ICC with zero level of confidence and effectiveness of students, and the value of this parameter is statistically significant (p = 0.000). The coefficient of intercultural communication competence is not standardized and equals 0.477 implying that the confidence of the students and their effectiveness grow by 0.477 with each one-unit increment in the intercultural communication competence. The mean beta value of 0.495 demonstrates the moderately positive effect of ICC to the DV. Moreover, the t test of 8.009 and the significance of 0.000 indicate that the predictor is significant. On the whole, the findings show that ICC is a significant and positive determinant of confidence and effectiveness of students in the context of professional speaking with final-year engineering students.

Objective 3: To identify the major challenges faced by engineering students in demonstrating intercultural competence during spoken communication.

H3: Engineering students face significant challenges in demonstrating intercultural competence during spoken communication in professional and academic settings.

Table 7: Paired Samples Statistics Table

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Students' confidence and effectiveness	9.4900	200	2.41434	.17072
	Challenges faced	9.8050	200	2.62898	.18590

The paired samples statistics provide the descriptive comparison of the confidence and the effectiveness of students and the obstacles encountered in the presentation of the intercultural competence during the spoken communication. Students' confidence and effectiveness mean score is 9.49 and the standard deviation is 2.41, which is moderate, as the respondents showed moderate confidence in the process of professional speaking. Comparatively, challenges faced have a mean value of slightly higher at 9.81 and a standard deviation of 2.63 indicating students have a rather higher degree of difficulty when attempting to show intercultural competence in communication. The standard deviations are comparatively similar which means that there is a similar distribution of responses of the two variables. In general, the findings indicate that, although students have a good degree of confidence and effectiveness in communication, they also face significant difficulties in implementing intercultural competence when engaging in oral communication in the academic and workplace setting.

Table 8: Paired Samples Correlations Table

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	Students' confidence and effectiveness & Challenges faced	200	.344	.000

The paired samples correlation is used to test the correlation between the student confidence and effectiveness, and the obstacles related to the ability to practice intercultural competence when engaging in spoken communication. The findings indicate that the CC between the two variables is 0.344, which suggests that there is a moderate positive relationship between the variables. It may indicate that students who report more confidence and effectiveness regarding the situations of professional speaking are also more likely to report the occurrence of challenges associated with intercultural communication. The level of significance of the value of 0.000 is less than the level of 0.05 hence the relationship is statistically significant. In general, the results suggest that although students can be quite sure that they can effectively communicate, they still experience the evident challenges using intercultural competence in real-life communication scenarios, especially when they are placed in diverse academic and professional settings.

Table 9: Paired Samples Test Table

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Students' confidence and effectiveness – Challenges faced	-.31500	2.89268	.20454	-.71835	.08835	-1.540	199	.125

The paired samples t-test was done to check whether there exists significant difference between confidence and effectiveness of students and the challenges encountered when displaying intercultural competence during oral communication. The findings have a mean difference of -0.315 and SD of 2.892 and a standard error mean of 0.205. The t value is calculated to be -1.540 and degrees of freedom is 199. The difference between the two variables is not statistically significant as its significance value ($p = 0.125$) is bigger than the standard significance level (0.05). Moreover, the 95 percent confidence interval of the difference lies within 0.088 -0.718, which has zero, which again proves that there is no significant difference between the two. The above findings indicate that, though students feel that the challenges are somewhat more than their confidence and effectiveness in the professional speaking situations, the difference is not significant enough to be considered as being statistically significant in the study with the final-year engineering students.

6. DISCUSSION

The competence of intercultural communication has become an essential element of professional competence development in engineering education, especially when speaking about the conditions of globalization and international cooperation. Graduates in engineering should be prepared to work in a multicultural environment in which they will not only be required to communicate effectively based on language skills, but also the knowledge of cultural differences that he or she can understand and react accordingly. Intercultural awareness helps people to acknowledge cultural differences, explain various patterns of communication and adjust their language use in cross-cultural communication. The connection between language learning and intercultural competence has been highlighted as an interreligious process that strengthens each other by scholars. To illustrate, Kozlovska et al. (2022) state that intercultural communication skills may be an effective instrument of improving the communicative competence in English since when learners can be exposed to different cultural contexts, they will be able to change their communicative approaches.

Likewise, Feng, Aziz, and Syarizan (2024) emphasize that an increased language proficiency is commonly linked to better intercultural communicative competence, specifically, in terms of attitudes, skills, and cultural awareness. Wang, Wang and Wei (2025) also observe that language proficiency is an important aspect in determining intercultural competence since through communication in a foreign language, people are able to engage more in intercultural interactions. Rico-Garcia and Fielden Burns (2020) also confirm these views and highlight that intercultural communication skills are critical skills that an engineer should possess to operate in international labor markets. All these studies are pointing to the fact that engineering education should incorporate the combination of language training and an intercultural learning experience to equip students with requirements of the international work environment.

Moreover, intercultural communication competence is important in the context of improving the confidence and effectiveness of students when interacting professionally. Working with people and organizations of various cultural backgrounds is a common occurrence in the work of engineering professionals, and effective cross-cultural communication is a key skill they need in the workplace. Riemer (2022) underlines that communication training that will help students learn to communicate effectively across a different culture should be integrated into engineering education because technical skills will not make students successful in the global industries. On the same note, Sokol (2025) states that intercultural competence helps an individual to decode cultural signals, handle misinterpretations and develop fruitful professional relationships within a multicultural work setting. Studies such as that by Owens and Hite (2022) also note that projects of global collaboration and intercultural learning could contribute significantly to the development of communication skills among students studying STEM due to the possibility to experience the cross-cultural interaction in the real-life situation.

Moreover, Mohamed et al. (2020) emphasize that the gap between language training and professional communication requirements in engineering-related fields can be filled by the structured communication training at the institutions of higher learning. Multicultural learning experiences, use of group projects, and other experiences associated with international communication would thus help in the development of intercultural adaptability as well as communication confidence. Nevertheless, according to the scholars like Vodovozov and Raud (2020), intercultural interactions can also be fraught with some communication barriers, especially when students have to deal with new cultural norms, or language barriers. To this end, educational institutions are forced to incorporate an integrated method of education that incorporates intercultural communication skills, language acquisition, and practical learning experiences so as to prepare engineering students with the competencies needed to effectively engage in the global professional world.

7. CONCLUSION

The study concludes that English-speaking proficiency and intercultural communication competence are significant and related abilities that play a significant role in the professional readiness of the engineering undergraduate student in a globalized world. The results show that the final-year engineering students exhibit the moderate level of intercultural awareness and English-speaking proficiency, which means that students have a basic level of the competencies, but additional development is required to meet international professional requirements. Another finding of the results is that the relationship between IA and ESP is positive and statistically significant, which indicates that the more students are aware of the cultural differences and intercultural interactions, the higher their effectiveness in communicating in English. More so, the regression analysis affirmed that intercultural communication competence is significantly related to the confidence and the effectiveness of students in professional speaking situations, that is, the communication competence of intercultural students in understanding and adapting to various cultural communication patterns increases the confidence of the students in communication.

Simultaneously, the analysis also reveals that the students face some difficulties in expressing intercultural competence when interacting with each other in spoken communication, which is one of the symptoms of the complicated nature of speaking in multicultural settings. These results support the notion that engineering education needs communication competence that goes beyond the linguistic skills and includes intercultural sensitivity, adaptability, and collaborative communication skills. Hence, in an attempt to ensure that students enhance their language and intercultural skills, emergent communication instruction, intercultural education, and hands-on speaking practice should be incorporated into the academic programs of private technical institutes. Not only will these initiatives enhance the communication effectiveness of the students but also their confidence, professional preparedness and global employability in the multicultural and international work environments that are becoming more multicultural and international.

7.1. Implication of the Study

The implications of the findings in the current study to engineering education and curriculum development in the private technical institutes are significant. The findings indicate the importance of intercultural communication competence when used alongside English language training to improve the level of professional communication among students. The activities that should be included in institutions are group discussions, intercultural workshops, presentations, and industry interaction programs to enhance not only the cultural awareness but also speaking confidence of students. This may assist students to acquire skills of effectively communicating in multicultural workplace. Besides, the educators and policymakers might create communication-oriented modules which integrated language learning with intercultural knowledge, and thus enhanced the global employability of the students and trained them to work in the international workplaces.

7.2. Limitation of the Study

However, the study has its limitations which can be identified despite the insights it provides. This study was restricted to final-year engineering students in the private technical institutes of Delhi NCR which cannot be generalized by other areas or institutions like government engineering colleges or universities. Another limitation of the study is that it depended on quantitative research design based on a structured questionnaire, which might not be able to exhaust the richness of the experiences, perception, and communication behavior of the students in an intercultural setting. Also, the respondents self-reported the data, which can affect bias in the response or subjective interpretation in measuring intercultural competence and communication skills.

7.3. Future Research of the Study

The current study can be further refined in the future research by incorporating more diverse and varied sample of students in various regions, institutions, and academic fields so that the generalization of the results can be improved. Mixed-method or qualitative research could also be the way out as researchers would get more information about the experiences of students in terms of dealing with intercultural communication and English-speaking issues. Longitudinal studies would also be able to explore the development of intercultural competence as time progresses as students go through their academic life. Also, other aspects of digital communication, international exposure, internship, and collaborative projects with global partners can be considered in future research to influence the development of intercultural communication competence in engineering students.

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