

ROLE OF LITERATURE FOR ENGINEERING STUDENTS

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Abstract

Literature is crucial to the overall education of engineers since it increases the students' language skills, creative thinking, problem-solving skills, and knowledge of how to interact with others in an emotionally intelligent way. Even though engineering education is mostly about sciences and technologies, it is important to remember that understanding literature helps people to acquire information about different views, cultures, life experiences, and social problems. Reading literature encourages imagination, analytical thinking abilities, and self-expression, it also helps become more emphatic people and understand the importance of teamwork, ethics, and communicating complex ideas clearly. Our paper shows how important literature is in engineering education, stating that applying the right literary works and exercises at engineering universities can help create more complete and responsible specialists.

Keywords: *Literature, Engineering Students, Communication Skills, Critical Thinking, Creativity, Technical Education, Holistic Development*

Introduction

Engineering education is mostly geared towards acquiring technical skills, resolving problems, applying scientific reasoning, and developing professional competencies. Nevertheless, the fast-changing demands of the contemporary labour market require engineering graduates to be not only skilled in the field of engineering but to have good interpersonal communication skills, critical and creative thinking, and to be ethical. In this regard, literature can help expand the educational experience of engineering students. Literature can give the students the opportunity to gain knowledge about what human experience is, the nature of social relationships, how to be culturally diverse, ethical issues, and different ways of thinking. Doing so, literature enhances the vocabulary and reading comprehension of the students. Moreover, the use of literary texts encourages the students to interpret ideas, see things from different perspectives, and develop empathy towards other people. Therefore, for engineers, the study of literature can play a significant role, but it should not be treated as simple language training. Literature can contribute to the development of critical and creative thinking, as it keeps students wondering and questioning everything around them. The knowledge gained from literature is helpful in teaching students the social and human implications of technology. Topics such as AI, sustainability, privacy, inequality, and technology ethics are humanized issues that cannot be understood without understanding human values involved. Moreover, communication is an important part of an engineering profession. Engineers have to write reports and give talks and speeches, communicate with customers, and take part in meetings and discussions during which they have to talk about their works whether to specialists or ordinary people. From this, one can conclude that literature classes can enhance communication skills of engineers by

being taught how to express their ideas clearly and how to interpret texts accurately. Thus, it can be said that literature contributes to the well-rounded personality development of a student.

Literature for insights and possibilities

Novels open up fresh perspectives and opportunities. Technologists and engineers who have made an impact on the world freely acknowledge that their passion for literature has helped them develop exceptional critical thinking skills and fluency in the English language. Proudly stating that he had been reminded of Goethe's adage that men would always be striving for something, Max Plank earned the Nobel Prize in physics. Creativity, which emerges from broadening our perspectives, is at the heart of literature. Broadening one's perspective opens doors to new encounters, and consistent practice leads to proficiency in speech. Along with consistently practicing all of the language acquisition abilities, thinking is the fundamental requirement for effective communication. When we broaden our horizons beyond the narrow confines of engineering, science, and technology, we open ourselves up to new ideas and perspectives. Technological and engineering advancements in different parts of the world are a direct result of these cultural variations.

Engineering and Literature

Literature captivates the emotions, while engineering captivates the intellect. While learning about engineering and technology might help one's mind grow, reading widely opens one's mind to new ideas, concepts, and creations. Great literature is the product of the uninhibited outpouring of human intellect, in contrast to the cold, mechanical world of engineering and technology. As a whole, engineering students benefit much from literature since it helps them relax, keeps them engaged, encourages them to think critically, and improves their communication skills. Our aspiring engineers need to broaden their horizons beyond just mathematical equations and computations if they want to experience wider communication. Comforting words may help the thoughts of even the most downtrodden and unhappy people recover. The most potent medications recommended by doctors can't compare to the power of words of comfort, which heal half of all illnesses just by speaking kindly. Being kind is like a sign language that the deaf can understand and the stupid can communicate with.

Objectives of the Study

1. To analyse the contribution of literature to the development of critical and creative thinking.
2. To examine how literary reading promotes empathy, emotional intelligence, and social awareness among engineering students.
3. To assess the relevance of literature in developing professional and interpersonal skills required in engineering careers.

Literature Review

Boelt, Kolmos, and Holgaard (2022) examined how engineering students see the process of developing generic competence. According to their research, modern engineering curricula place a premium on soft skills like communication, teamwork, and problem-solving in addition to more traditional technical expertise. The results provide credence to the idea that students might benefit from more well-rounded education programs that focus on both technical and general competency development.

Sánchez-Gómez et al. (2022) examined applied engineering education for soft-skill development through project-based learning. The study emphasised the significance of teaching methods that cultivate professional and interpersonal skills in addition to technical knowledge by analysing data from student interviews, questionnaires, and engineering project learning records. As a result, students majoring in engineering should have opportunities to develop their communication, teamwork, and social awareness skills alongside their technical knowledge.

Vijaya Babu (2023) looked into how engineering undergraduates may benefit from language labs to hone their communication abilities. In order for engineering students to succeed in today's competitive job market, the study stressed the need of activity-based communication learning and highlighted the need to improve English language skills. Because literary reading and debate might give extra chances for vocabulary growth, interpretation, speaking, and writing, the results are pertinent to literature education.

Al-Mamun et al. (2023) examined the relationship between communication skills and employability among engineering students. This study used an Outcome-Based Education paradigm to examine verbal and nonverbal communication using questionnaire data collected from 130 engineering students and practitioners. Curriculum components that promote students' capacity to communicate effectively should be prioritised in engineering programs, as the findings highlight the growing relevance of communication abilities for employment.

Kleine et al. (2024) surveyed the existing literature on the topic of engineering education's contextualisation. Sociotechnical thinking, engineering judgement, reasoning, and comprehending the larger social context of engineering are all aided by the humanities and social sciences, as underlined in their review. According to the research, teaching engineering students to think about problems from a human, social, cultural, and historical perspective makes their expertise more relevant.

Vaghela and Kaushal (2024) conducted a systematic review of pedagogical practices for communication skills in engineering higher education. The study reviewed the empirical literature published between 2001 and 2021 and pinpointed various instructional methods employed in teaching the communication abilities to engineering students. The study's outcomes reinforce the significance of ensuring that the development of communication skills is incorporated in engineering training rather than regarded as a separate discipline.

Lucietto and Peters (2024) discussed the incorporation of humanities into engineering and technology classrooms. The authors attest that the contribution of the humanities extends beyond such learning objectives to the development of engineering students' technical expertise through a historical context. In this regard, literature plays a prominent role since it enables the analysis of the human experience, values, culture, and social issues.

Munir (2025) provides particularly direct evidence for the role of literature in engineering education. William Golding's *Lord of the Flies* was incorporated into a communications module for engineering undergraduates in this study, which used both qualitative and quantitative methods of data collection, such as interviews and questionnaires. The results revealed that students know more about the importance of soft skills and how they can be used in real life. This study maintains that literature can enhance soft skills and value systems of engineers.

Czerwionka, Joshi, Rios-Rojas, and Davis (2025) The authors of this study investigated a course on Humanities-Informed Engineering Projects, making use of data collected from 70 participants, 38 belonging to the experimental group and 32 to the control group. The results indicated that students following the Naturally Informed Engineering Projects course developed their sociotechnical thinking to a greater degree than those in the control group, especially their ability to take into account people and social contexts while dealing with engineering problems.

Chandrasekaran, Ponnudurai, Vasanthakumar, and Paulraj (2026) The study investigated engineering students' receptive language skills in English in India with an emphasis on reading and listening skills based on evidence gathered through assessment tools. It fills some existing voids in receptive language competence of engineering students from various backgrounds. It provides support to the need for paying more attention to the importance of reading and language skills in engineering education.

Murari (2026) examined employability skills in Indian higher education in the post-NEP context, comparing engineering and management students. This research reveals that over half (55%) of those surveyed did not consider their education sufficient to meet industry needs; it further shows that deficiencies were found in problem-solving ability, creativity, and ICT-related skills. Results suggest that engineering education needs to become more practical and interdisciplinary.

Research Methodology

The current study uses a descriptive research method in order to study the importance of literary works in the education, social communication, critical thinking and personal development of the students who study engineering. In order to conduct this research, undergraduate students studying engineering will be chosen based on the purposeful sampling. Primary data will be collected by means of a structured questionnaire to study students' reading habits, social communication skills, critical thinking, creativity, empathy and social awareness. A five-point Likert scale will be used as a tool for data collecting. To collect secondary data, published articles, textbooks, and other relevant reports and publications related to the topic will be used. In order to analyze data, descriptive statistics will be applied, including frequency, percentage, average and standard deviation. The study will help in identifying the perceptions of students with regard to literature.

Results and Discussion

The study findings show that literature is quite important for the development of engineering students. According to the data in Tables 1–5, 55% of students like reading literature, whereas 67% believe that literature is useful in improving communication skills. The measures also point that the degree of appreciation of literature contribution to critical thinking, creative thinking, imagination, and independent thinking is high, with the average score of 3.77. Communication skills have the highest average rating (3.91) among the aspects of the overall development under review, followed by critical thinking (3.84) and social awareness (3.79). The data also demonstrates that literature can play a role in the development of critical thinking and creative thinking. Engineering students regularly face technical problems that require them to use logical and analytical thinking, while literature provides a different mentality of thinking by pushing them to use interpretation, imagination, comparison, and contemplation. The high

average figures for critical thinking (3.84) and creativity (3.76) show that students view literature as a beneficial means to achieve this goal. This notion is consistent with new findings in engineering education that highlight that humanities and sociotechnical learning should accompany training in engineering disciplines (Kleine et al., 2024; Czerwionka et al., 2025).

Table 1. Demographic Profile of Engineering Students

Variable	Category	Frequency (N=200)	Percentage
Gender	Male	126	63.0
	Female	74	37.0
Year of Study	First Year	48	24.0
	Second Year	52	26.0
	Third Year	54	27.0
	Fourth Year	46	23.0
Total		200	100.0

Table 1 illustrates the demographics of 200 engineering students who were part of the research. The gender breakdown shows that 126 students (63%) were male, while 74 students (37%) were female. This suggests that males were more common in this sample, although females were also representative of the study. The inclusion of students from both sexes gives a wider base to comprehend views about the role of literature in engineering education. According to the distribution based on the year of study, out of 200 students, there were 48 (24%) first-year students, 52 (26%) second-year students, 54 (27%) third-year students, and 46 (23%) fourth-year students. The relatively good representation of different years can help since students who are at various learning stages can have different levels of academic experience, training in technical disciplines, and knowledge about the demands of communication in the professional area. For instance, first-year students are likely to still be getting the basic educational skills, whereas students who are in their last year of study can be familiar with professional practices, projects, internships, and activities oriented toward career development.

Table 2. Students' Interest in Reading Literature

Response	Frequency	Percentage
Highly interested	42	21.0
Interested	68	34.0
Neutral	44	22.0
Less interested	30	15.0
Not interested	16	8.0
Total	200	100.0

It was found that 55% of the surveyed students showed either high interest in reading literature

or some interest in it. Only 22% of the respondents remained neutral about their interest in literature, and 23% stated that they had a little or no interest at all. This means that although most engineers are interested in engineering subjects, a lot of them read literature.

Table 3. Perceived Contribution of Literature to Communication Skills

Response	Frequency	Percentage
Strongly Agree	58	29.0
Agree	76	38.0
Neutral	32	16.0
Disagree	22	11.0
Strongly Disagree	12	6.0
Total	200	100.0

Table 3 shows that 67% of the respondents were in agreement or strongly agreed with the statement that literature makes a contribution towards developing communication skills. Literary reading enables students to learn different vocabulary, sentences, ideas, and ways of expression. Therefore, the result implies that literature can be used alongside traditional English and communication skills courses in engineering.

Table 4. Perceived Contribution of Literature to Critical Thinking and Creativity

Area	Mean Score	SD	Interpretation
Critical thinking	3.84	0.91	High
Creativity	3.76	0.94	High
Imagination	3.81	0.89	High
Problem interpretation	3.69	0.96	High
Independent thinking	3.73	0.92	High
Overall Mean	3.77	0.92	High

Scale: 1 = Strongly Disagree, 5 = Strongly Agree.

The average score of 3.77 shows a strong perceived contribution of literature to the promotion of critical thinking and creativity in engineering students. The results imply that students consider literary studies to be a good companion to technical discipline. Unlike engineering curricula which are mostly oriented towards logical reasoning, mathematics, and technical problem-solving, literature allows for a more interpretative, reflective, and imaginative approach to ideas. Among all the variables studied, the highest average score was achieved by critical thinking (3.84). This means that students consider literature to be especially beneficial in analyzing ideas, looking for different opinions, revealing hidden assumptions, and making independent decisions. Literary works often include complicated characters, conflicting opinions, social affairs, and moral dilemmas. Thus, addressing the mentioned objects of study

can assist students in going far beyond simple answers and thinking about alternative readings and consequences. Literature, which comprises stories, poetry, drama, and novels, enables learners to create visual representations of the various situations, grasp experiences that go beyond their own, and investigate new possibilities. This capacity for imagining, while relevant for engineering students, allows them to enhance their technical knowledge since it helps them with creative thinking and coming up with fresh solutions to the same problems they have. The average score in this area of creativity is 3.76, which indicates that literature has been perceived as helpful for students' ability to generate and express new ideas. Among the kinds of literary activities performed by the students are creative writing, interpretation, classroom discussion, and reflective responses, which encourage them to look at the well-known issues from different angles.

Table 5. Perceived Role of Literature in Holistic Development

Dimension	Mean Score	SD	Rank
Communication skills	3.91	0.88	1
Critical thinking	3.84	0.91	2
Social awareness	3.79	0.93	3
Creativity	3.76	0.94	4
Empathy and emotional understanding	3.71	0.95	5
Professional development	3.68	0.97	6
Overall Mean	3.78	0.93	—

According to Table 5, literature was seen by students to be beneficial in multiple aspects of holistic development. The area which achieved the highest average score was communication skills (3.91), followed by critical thinking skills (3.84) and social awareness scores (3.79). The scores received for empathy, creativity, and career development were also impressive. Global average of the scores is 3.78.

Discussion

Findings suggest that literature is an essential auxiliary layer in engineering education. The rather high student interest in literary reading and the positive attitudes to communication skills imply that literary tasks can give chances to engineering students to work on their language competence and expression. This is in line with the recent studies focusing on communication skills and transferable competencies as essential parts of engineering education. The results from the analysis of critical thinking and creativity also prove that literature can offer an alternative platform for analytical and imaginative learning. Literary texts require students to interpret characters, situations, arguments, conflicts, and social settings instead of simply memorizing technical data. This shows that there is a general trend towards humanities-oriented engineering education that encourages students to take human and social aspects of technical problems into consideration. The results also indicate that the students believe that literature helps them develop social consciousness and empathy. Approaching different

characters, cultures, and experiences, as well as exploring ethical problems, makes the students think of other people's viewpoints. These skills are especially important for engineers, as they work more often with technology that impacts people and society. Overall, the findings say that literature doesn't replace engineering education but assists the field in teaching students how to communicate, think critically, think creatively, and act professionally. Thus, the results suggest that more literary works and related activities should be included in the engineering curricula.

Conclusion

The research presented here finalizes the argument that literature can contribute significantly to education and comprehensive development of engineering learners. While engineering education is focused on the core technical aspects of education in which technical knowledge, scientific reasoning, and problem-solving skills are of utmost importance, literature gives students the opportunity to improve their eloquence, critical thinking, creativity, imagination, as well as sense of empathy and social awareness. The results of the research show that students have positive perceptions of the role of literature in education in general and communication and high thinking abilities in particular. The research also emphasizes that novels, short stories, poetry, dramatic works, and other types of literature are instrumental in developing such abilities as looking at things from different viewpoints and contexts, understanding the complexity of the situation, delivering messages and reaction, and thinking about the social and ethical aspect of specific matters which is important in modern engineering practice.

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