The Impact of English Communication Skills on Engineering Activity Performance among Mechanical Engineering Students in UiTM Bukit Besi, Terengganu, Malaysia

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ABSTRACT

English communication skills have become increasingly important in engineering education due to globalization, industrial collaboration, and technological advancement. Mechanical engineering students are required not only to master technical competencies but also to communicate effectively in academic and industrial settings. This study investigates the impact of English communication skills on engineering activity performance among Mechanical Engineering students at Universiti Teknologi MARA (UiTM) Bukit Besi, Terengganu, Malaysia. A quantitative research approach was employed using questionnaire surveys distributed among diploma students in the Faculty of Mechanical Engineering. The study examines the relationship between English speaking, writing, reading, and listening skills with students' performance in engineering-related activities such as presentations, laboratory work, technical report writing, teamwork, and project development. Findings indicate that English communication proficiency significantly influences students' confidence, teamwork efficiency, technical understanding, and academic performance. Students with higher English proficiency demonstrated better engagement in engineering activities and greater readiness for industrial training and employment. The study concludes that strengthening English communication skills among engineering students is essential to improve engineering education quality and graduate employability.

Keywords: English communication skills, engineering education, mechanical engineering students, UiTM Bukit Besi, engineering activity performance, graduate employability

INTRODUCTION

The engineering profession no longer relies solely on technical competencies and analytical skills. Modern industries increasingly require engineers who are capable of communicating effectively in multidisciplinary working environments (Baskakova et al., 2024). Mechanical engineering students are frequently involved in laboratory experiments, technical presentations, project discussions, industrial training, and collaborative design activities that demand effective communication abilities. Consequently, English communication skills have become an essential component in engineering education. Communication skills include oral communication, technical writing, interpersonal interaction, listening ability, and presentation competency (Aley & Levine, 2020). These skills assist students in conveying technical information, understanding engineering problems, and collaborating effectively with peers and instructors. Studies have shown that engineering students with stronger communication competencies tend to perform better academically and professionally (Palpanadan et al. 2023).

Engineering education has evolved significantly in the era of globalization and Industry 4.0. Modern engineers are expected not only to possess strong technical knowledge but also effective communication skills, particularly in English, which is widely recognized as the global language of science, technology, and engineering. In Malaysia, engineering graduates frequently encounter challenges in communicating technical ideas effectively in English, especially during presentations, technical discussions, report writing, and industrial training (Palpanadan & Hilmi, 2024). In the era of Industry 4.0 and digital transformation, engineers are increasingly required to communicate with multidisciplinary stakeholders, including managers, technicians, researchers, and clients. Effective communication facilitates teamwork, improves project coordination, and minimizes technical misunderstanding. Wu et al. (2023) highlighted that communication skills significantly contribute to engineering students' employability and workplace readiness. The Accreditation Board for Engineering and Technology (ABET) highlights the critical importance of strong English communication skills as part of its student outcomes, especially under Criterion 3: Student Outcomes. ABET requires programs to produce graduates with the ability to communicate effectively with a range of audiences (ABET, 2021).

Mechanical engineering students commonly participate in engineering activities such as machine design projects, thermodynamics laboratory work, computational simulations, and industrial attachments. These activities require students to discuss technical ideas, prepare reports, conduct presentations, and collaborate in groups. Weak English communication skills may negatively affect project execution, teamwork efficiency, and technical documentation quality (Ibrahim et al., 2025). Mechanical engineering students in Malaysian higher education institutions often experience difficulties in oral communication and technical writing despite having satisfactory academic performance in technical subjects. These communication barriers may negatively affect engineering activities such as laboratory experiments, project presentations, teamwork, and industrial collaboration. Previous studies highlighted that English proficiency significantly contributes to academic achievement, employability, and workplace readiness among engineering graduates (Ismail et al., 2025). Recent studies further emphasized that communication-oriented engineering courses positively improve students' self-efficacy, academic performance, and communication competence. Therefore, understanding the relationship between communication skills and engineering activity performance is important for improving engineering education quality.

This paper aims to investigate the impact of English communication skills on engineering activity performance among mechanical engineering students and discuss the importance of integrating communication training into engineering curricula. At Universiti Teknologi MARA (UiTM) Bukit Besi, engineering students are exposed to various practical and project-based learning activities that require effective communication in English. However, some students still face challenges in expressing technical ideas confidently, particularly during presentations and industrial interactions. Therefore, this study aims to investigate the impact of English communication skills on engineering activity performance among Mechanical Engineering diploma students of UiTM Bukit Besi.

LITERATURE REVIEW

Communication Skills in Engineering Education

English communication skills are widely recognized as fundamental soft skills in engineering education in any suitable medium or platform such as U-Future system where evaluation of using English Language in classroom through Student Feedback Online (SuFO) system in UiTM (Eng et al., 2015; Noh et al., 2023). Engineers are expected to explain technical concepts clearly, prepare engineering reports, and collaborate effectively within multidisciplinary teams (Artemeva, 2005). Communication competency includes speaking, listening, reading, writing, and interpersonal interaction as English communication skills include speaking, writing, listening, and reading abilities used in academic and professional contexts (Tahir et al., 2025). In engineering education, these skills are essential for understanding technical materials, preparing reports, presenting projects, and collaborating with multidisciplinary teams. Studies have shown that engineering students with stronger communication skills tend to perform better academically, professionally and enterprenuership (Jafari-Marandi et al., 2019; Mohamed et al., 2020).

According to Patil and Rao (2025), communication skills act as the "lifeline" of engineering students because

they directly influence academic success and career development. The study revealed that engineering students with strong communication abilities demonstrated better confidence in presentations, group discussions, and technical interactions. According to Palpanadan and Hilmi (2024), engineering undergraduates in Malaysia identified pronunciation, fluency, and confidence as major factors affecting effective communication in academic activities. Similarly, Ismail et al. (2025) found that communication competency strongly influences engineering graduates' employability and workplace adaptability. Similarly, Han (2024) reported that engineering communication courses significantly improved engineering students' self-efficacy and communication competence. Engineering students who received communication-based instruction showed higher confidence in technical discussions and collaborative learning activities.

Communication Skills and Teamwork Performance

Engineering education heavily emphasizes teamwork-based learning because engineering projects commonly involve collaborative problem-solving. Effective communication enables team members to exchange ideas, coordinate tasks, and resolve technical issues efficiently. Engineering activities involve collaborative learning, laboratory experiments, technical presentations, and project management. Effective communication is necessary to ensure accurate information transfer and teamwork efficiency (Ballesteros-Sánchez et al., 2021). Students with weak English proficiency may experience difficulties understanding technical instructions, discussing engineering concepts, and presenting project outcomes (Isnin et al., 2025).

Cox et al., (2010) and Coffelt et al. (2024) identified teamwork, leadership, and interpersonal communication as the most demanded competencies among engineering graduates. Employers highlighted that graduates often possess adequate technical knowledge but insufficient oral communication and audience adaptation skills. Research also indicates that communication skills contribute to problem-solving ability and confidence during engineering tasks. Students who actively communicate in English are more likely to participate in discussions and demonstrate leadership during group projects (Khamis et al., 2024).

In mechanical engineering projects, students frequently engage in group-based assignments involving CAD modeling, prototype fabrication, fluid mechanics experiments, and thermal analysis. Poor communication may lead to project delays, misunderstanding of technical specifications, and ineffective collaboration. Additionally, communication skills improve conflict management within engineering teams. Students with effective communication competency can express technical opinions clearly and contribute constructively during group discussions (Dannels, 2002). This creates a more productive learning environment and enhances project outcomes.

Technical Writing and Engineering Performance

Technical writing is another critical communication component in engineering education. Mechanical engineering students are required to prepare laboratory reports, research papers, technical proposals, and project documentation. Effective technical writing ensures accurate interpretation of engineering findings and supports knowledge dissemination. Studies indicated that communication-based engineering curricula positively influence students' technical writing abilities and academic performance. Students with stronger writing competency tend to produce clearer engineering analyses and better-organized reports. Technical writing skills are particularly important in final year projects and industrial training reports where students must explain methodologies, discuss engineering results, and justify design decisions systematically. Weak writing skills may reduce report quality despite strong technical findings.

Employers in engineering industries increasingly emphasize soft skills, especially English communication proficiency. Many multinational companies require engineers to communicate effectively with international clients, suppliers, and technical teams (Jafari-Marandi et al., 2019). Poor English communication has been associated with lower employability among engineering graduates in Malaysia. The integration of English communication training in engineering education is therefore necessary to enhance students' industrial readiness and competitiveness in the global workforce (Cox et al., 2010; Borrego et al., 2013; Mohamed et al., 2022).

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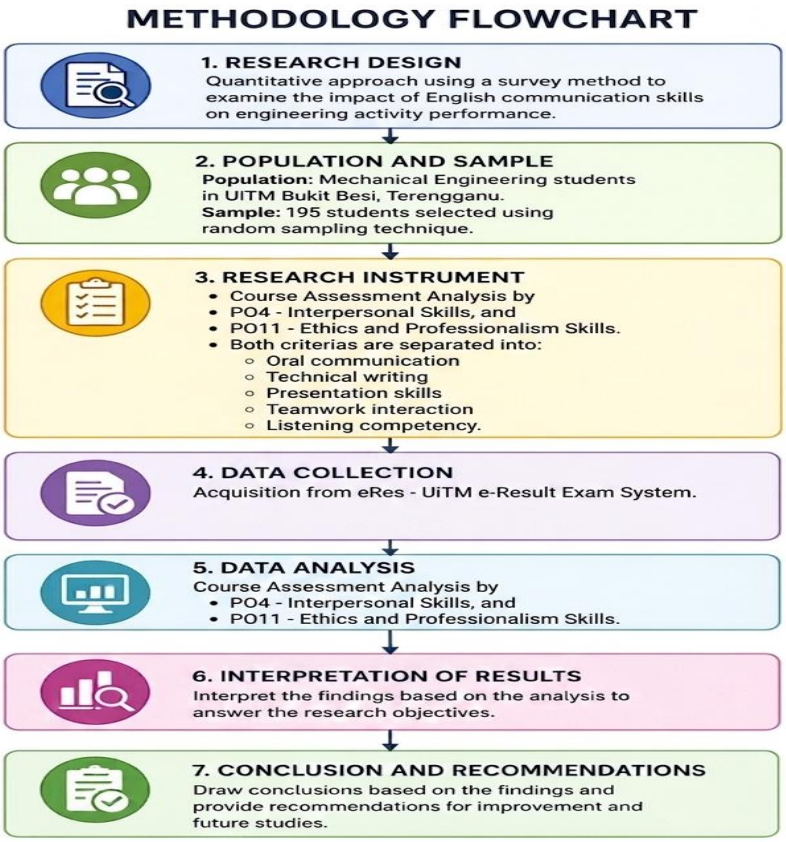
METHODOLOGY

Research Design

This study employed a quantitative survey method to evaluate the relationship between English communication skills and engineering activity performance among Mechanical Engineering students. The methodology through out this study can be referred in Figure 1.

Figure 1. Methodology Flowchart of the Study



Population and Sample

Table 1 presents the specification of English language courses offered to Mechanical Engineering diploma students at Universiti Teknologi MARA (UiTM) Bukit Besi. The table outlines the course names, course codes, academic level, semester placement, and student learning time allocated for each English communication course within the diploma programme. The table shows that four English language courses were incorporated into the diploma curriculum, namely English for Communicative Competence I (LCC111), English for Language Competence I – Revised Syllabus (LCC121), English for Communicative Competence II (LCC112), and English for Communicative Competence III (LCC113). All courses were designed specifically for diploma-level students, indicating the institution's emphasis on strengthening English communication skills throughout the students' academic progression.

In terms of course sequencing, three courses, namely LCC111, LCC121, and LCC112, were conducted during Semester 1 of Year 1, while LCC113 was offered in Semester 3 of Year 2. This arrangement suggests that English language competency development was introduced early in the students' academic programme and continued at a more advanced level during the later stage of study. The progressive structure enables students to gradually develop foundational communication skills before advancing to more complex academic and technical communication competencies.

Table 1. Specification of English Language Course at the Faculty of Mechanical Engineering in UiTM Bukit Besi

Course Name	**English For Communicative Competence I**	**English For Language Competence I (A Revised Syllabus)**	**English For Communicative Competence II**	**English For Communicative Competence III**
Course Code	LCC111	LCC121	LCC112	LCC113
Level	Diploma	Diploma	Diploma	Diploma
Semester/Year	Semester 1/ Year 1	Semester 1/ Year 1	Semester 1/ Year 1	Semester 3/ Year 2
Student Learning Time	120 hours	80 hours	120 hours	120 hours

The student learning time allocated for the courses ranged from 80 to 120 hours. LCC111, LCC112, and LCC113 each consisted of 120 learning hours, whereas LCC121 involved 80 learning hours due to the revised syllabus structure. The higher number of learning hours for most courses indicates substantial emphasis on language practice, communication activities, presentations, discussions, and technical writing exercises that support engineering education. Meanwhile, the reduced hours for LCC121 may reflect curriculum restructuring intended to improve learning efficiency while maintaining essential language outcomes. Furthermore, the inclusion of communicative competence courses across different semesters demonstrates UiTM's commitment to preparing engineering students with adequate English proficiency for both academic and professional environments. Communication skills are particularly important in engineering education because students frequently engage in laboratory discussions, technical presentations, report writing, and industrial training activities that require effective English usage.

The table illustrates a systematic and continuous English language learning framework within the Mechanical Engineering diploma programme. The structured distribution of courses and learning hours supports the development of students' communication competency, which is essential for improving academic performance and employability in engineering-related industries. The English language courses offered at Universiti Teknologi MARA (UiTM) Bukit Besi were structured to strengthen students' communication competency progressively throughout their diploma studies. Each semester consisted of a 17-week learning period, allowing sufficient time for students to develop essential language skills through various interactive and collaborative learning approaches.

One of the foundational courses, LCC121 English for Language Competence I, focused on developing students' basic communicative abilities at the CEFR B1 (low) level where CEFBR is the Independent Intermediate level in the Common European Framework of Reference for Languages, indicating a user can handle familiar topics, routine situations, and independent travel. The course emphasized receptive, productive, and interactive communication strategies involving listening, reading, speaking, and writing skills. Students were trained to understand main ideas from familiar topics, participate in simple conversations, and respond appropriately to written texts and stimuli. Teaching and learning activities included blended learning, collaborative learning, interactive lectures, and classroom lectures to encourage active student participation. Additionally, the course incorporated communicative activities aligned with Bloom's Taxonomy in the affective domain (A3) and promoted awareness of Sustainable Development Goal (SDG) 15: Life on Land.

At a more advanced stage, LCC113 English for Communicative Competence III aimed to develop students into confident and independent users of English at CEFR B2 level. The course enhanced students' ability to identify relevant information from academic and non-academic texts, justify arguments fluently, and produce clear written responses supported by relevant details. Greater emphasis was placed on higher-level communication skills, particularly critical discussion, argumentation, and academic interaction. To support these learning outcomes, the course applied multiple student-centred approaches such as blended learning, discussion sessions,

peer practice, reading activities, vocabulary-focused reading exercises, self-directed learning, and small group sessions. Both courses demonstrate UiTM's commitment to strengthening English communication competency among engineering diploma students. The gradual progression from foundational communication skills in LCC121 to advanced communicative competence in LCC113 reflects a systematic approach to preparing students for academic, technical, and professional communication demands in engineering-related fields.

The respondents consisted of Mechanical Engineering students from Universiti Teknologi MARA (UiTM) Bukit Besi. A total of 195 students were selected using random sampling techniques involving diploma students who had experience in laboratory work, engineering projects, and technical presentations. The segregation of the students is based on the cohort as shown in Table 2 and Table 3.

Table 2. List of Samples Based on Type of Course and Semester of the Students of Cohort in 2025

Course Name	**English For Language Competence I**	**English For Communicative Competence III**
Course Code	LCC121	LCC113
No. of Groups	4	4
Total Number of Course Taker (Students)	51	72
Cohort	Year 1 Semester 1	Year 2 Semester 3

Table 3 presents the distribution of student samples based on the English communication courses offered across different semesters from the 2024–2025 cohort. The table demonstrates a structured progression of English language competency courses undertaken by students throughout their academic journey. The first course, English for Language Competence I (LCC111), was offered during Year 1 Semester 1 and involved four groups with a total of 70 students. This course represents the foundational stage of English communication development, focusing on basic language proficiency and communication skills necessary for academic adaptation at the tertiary level.

The second course, English for Communicative Competence II (LCC112), was conducted in Year 1 Semester 2 with four groups and 72 students enrolled. The slight increase in student number compared to LCC111 may indicate improved student retention or additional enrolment. At this stage, students were expected to enhance their communicative abilities, particularly in academic discussions, presentations, and interpersonal communication. The third course, English for Communicative Competence III (LCC113), was offered during Year 2 Semester 3 with a total of 72 students. The consistent number of students between LCC112 and LCC113 suggests stable course participation and continuity in the language development programme. This course likely emphasized more advanced communication competencies, including professional and technical communication skills relevant to students' academic disciplines. Additionally, all three courses recorded 100% course completeness, indicating that the dataset collected was complete without missing responses or participant attrition. This strengthens the reliability and validity of the study because the entire cohort successfully completed the respective courses and provided usable data for analysis.

Table 3. List of Samples Based on Type of Course and Semester of Students of Cohort from 2024 to 2025

Course Name	**English For Language Competence I**	**English For Communicative Competence II**	**English For Communicative Competence III**
Course Code	LCC111	LCC112	LCC113
No. of Groups	4	4	

Total Number of Course Taker (Students)	70	72	72
Cohort	Year 1 Semester 1	Year 1 Semester 2	Year 2 Semester 3
Percentage of Course Completeness	100%	100%	100%

Overall, the table shows a well-organized longitudinal sample structure that enables the researchers to examine the development of students' English communication competency across multiple semesters. The sequential arrangement of courses from foundational to advanced levels also supports comparative analysis of students' communication performance and progression over time.

Course Assessment Analysis

Data were collected using English Language course assessment performance through out the cohort of the samples which consist of communication skill assessment and engineering activity performance evaluation based on Program Learning Outcome (PLO) for the Faculty of Mechanical Engineering level as shown in Table 4. The PLO is a specific statement that explains what learners are required to know and areable to demonstrate by the time of graduation. These involve the knowledge, attitudes and skills that learners gain in each level of qualification (Ismail & Othman, 2023). The communications skills evaluated included oral communication, technical writing, presentation skills, teamwork interaction, and listening competency as shown in Figure 2. The data of PLO4 and PLO11 are acquired from the eRes - UiTM e-Result Exam System.

Table 4. Program Learning Outcome (PLO) for English Language Course for the Faculty of Mechanical Engineering

Course Code	**PLO4**	**PLO11**
LCC111, LCC121, LCC112, LCC113	Interpersonal Skills	Ethics and Professionalism Skills

Figure 2. Evaluation of English Communication Skill

RESULTS

Students' English Communication Proficiency

The findings revealed that most students possessed moderate English communication skills. Reading skills recorded the highest mean value, while speaking confidence showed the lowest mean. Many students reported difficulties in presenting technical ideas fluently in English during engineering activities (Ibrahim et al., 2025). This finding aligns with previous Malaysian studies indicating that engineering students generally demonstrate

stronger reading abilities than oral communication skills (Palpanadan and Hilmi, 2024). Engineering activity performance is an important indicator of students' readiness to face real engineering challenges in academic and industrial environments. In engineering education, students are commonly evaluated through several practical and professional activities that reflect both technical competency and soft skills development. One of the key components is laboratory performance, where students apply theoretical knowledge through experiments, data analysis, and technical observation. Effective laboratory work helps students develop analytical thinking, technical accuracy, and hands-on engineering skills.

Group project effectiveness is an important aspect of engineering activity performance because it develops teamwork, communication, leadership, and collaboration skills. Presentation performance is also essential, as engineering students must present technical findings and solutions clearly and confidently to different audiences. Problem-solving ability plays a major role in engineering education, requiring students to identify issues, analyze situations, and propose practical solutions effectively. In addition, industrial training readiness reflects students' preparedness for workplace environments through professional communication, adaptability, and technical competence. Overall, engineering activity performance involves both technical and interpersonal skills needed to produce competent and industry-ready engineering graduates. Students also reported that effective English communication improved teamwork efficiency and confidence during project presentations.

The Programme Learning Outcome (PLO) assessment for LCC121 English for Language Competence I at Universiti Teknologi MARA Kampus Bukit Besi shows strong student achievement in PLO4 and PLO11, which focus on communication, interpersonal skills, and academic performance. Most students achieved excellent results, with scores ranging from 80% to 100% and grades between A- and A+. Several students obtained full marks (4.00) in PLO11, while a few achieved satisfactory B+ grades. The strong performance in PLO4 demonstrates students' ability to apply English language skills effectively in presentations, discussions, and written tasks. This achievement reflects the effectiveness of interactive teaching approaches such as blended learning, collaborative activities, and peer discussions. Overall, the results indicate that the LCC121 course successfully enhanced students' English communication proficiency and supported the achievement of CEFR B1 learning outcomes among Mechanical Engineering diploma students at UiTM Bukit Besi.

Figure 3. Graph of Average Percentage of PLO4 and PLO11 Achievement For Groups of LCC121 Students

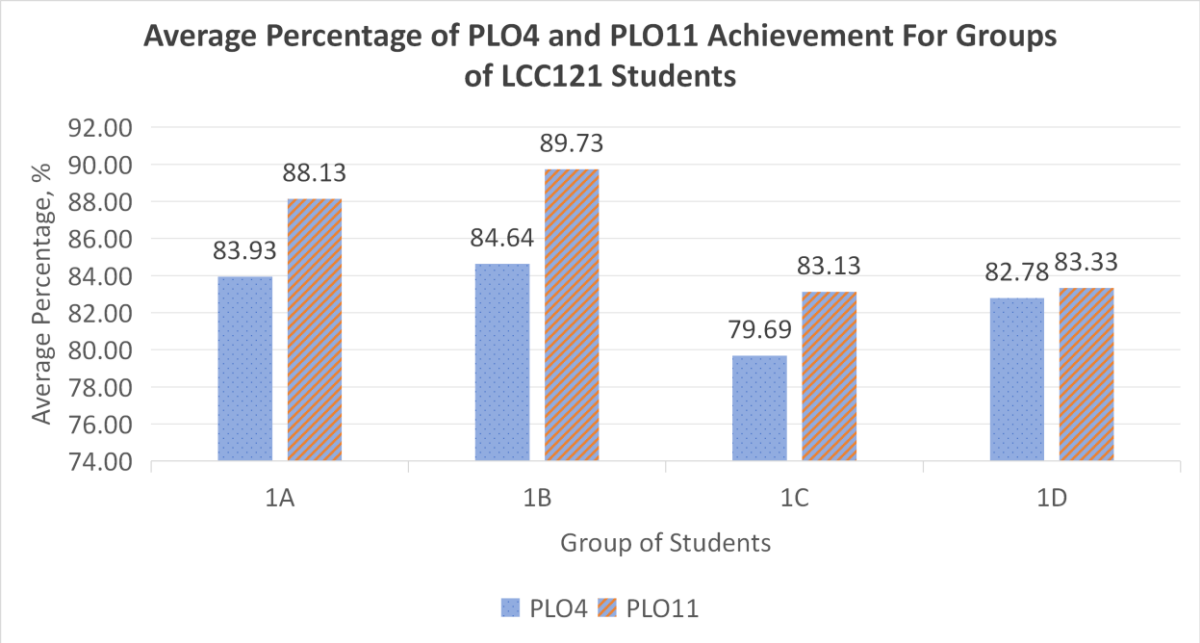


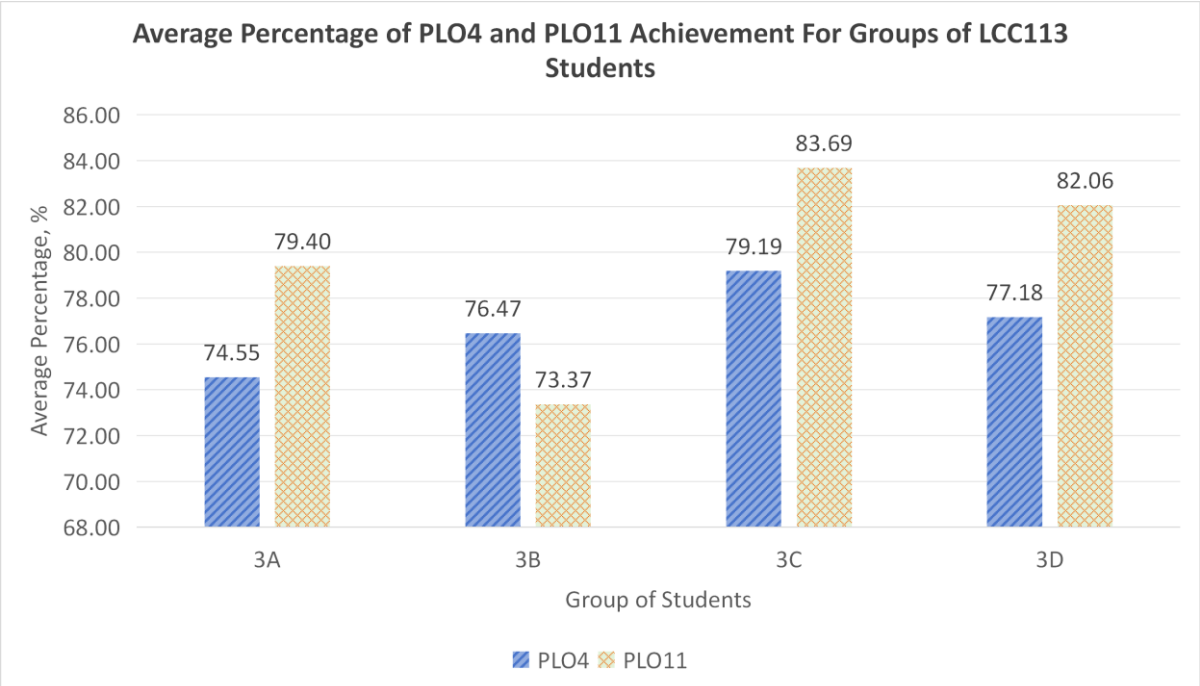
Figure 3 presents the average percentage achievement of PLO4 and PLO11 among four groups of LCC121 students (1A, 1B, 1C, and 1D). Overall, the results indicate that PLO11 achievement is consistently higher than PLO4 across all groups, suggesting that students performed better in competencies related to PLO11 than those measured under PLO4. Group 1B recorded the highest achievement in both learning outcomes, with 84.64% for PLO4 and 89.73% for PLO11. This suggests that students in Group 1B demonstrated the strongest mastery of

the assessed skills and competencies. Group 1A also performed well, achieving 83.93% in PLO4 and 88.13% in PLO11. The high percentages in these two groups may indicate effective collaboration, stronger engagement, or better adaptation to the learning strategies used in the course. In contrast, Group 1C showed the lowest performance, with 79.69% in PLO4 and 83.13% in PLO11. Although the scores are still relatively satisfactory, the gap compared to Groups 1A and 1B suggests that this group may have faced challenges in understanding course content, participating in collaborative activities, or maintaining consistent academic engagement. Group 1D achieved moderate performance, recording 82.78% for PLO4 and 83.33% for PLO11. Interestingly, the difference between PLO4 and PLO11 in Group 1D is very small, implying a more balanced achievement across both learning outcomes.

The graph also reveals that the difference between PLO4 and PLO11 is largest in Groups 1A and 1B, where PLO11 exceeds PLO4 by more than 4%. This trend may suggest that students are more proficient in higher-order or collaborative competencies represented by PLO11. Recent studies support the idea that collaborative and student-centered learning approaches can significantly improve learning outcomes and critical thinking skills in higher education (Bhuttah et al., 2024). Furthermore, research on collaborative online and cooperative learning environments found that effective group interaction and cooperative learning positively influence academic achievement, engagement, and interpersonal skills (Bach & Thiel, 2024). This may explain why some groups, particularly 1B and 1A, achieved stronger performance compared to others.

The consistently high percentages across all groups indicate that the course generally succeeded in helping students attain the targeted program learning outcomes. However, the variation between groups suggests that instructors may need to provide additional support, monitoring, or differentiated learning strategies for lower-performing groups such as 1C. Recent educational research emphasizes that structured collaborative learning, metacognitive support, and interactive learning strategies can enhance student achievement and engagement. The average percentage achievement of PLO4 and PLO11 among four groups of LCC113 students, namely Groups 3A, 3B, 3C, and 3D is illustrated in Figure 4. The results demonstrate noticeable variations between groups and between the two learning outcomes, indicating differences in students' performance and competency attainment. Overall, PLO11 achievement is higher than PLO4 in most groups, except for Group 3B where PLO4 exceeds PLO11. This suggests that students generally performed better in competencies associated with PLO11, although some groups showed stronger mastery of PLO4-related skills.

Figure 4. Graph of Average Percentage of PLO4 and PLO11 Achievement For Groups of LCC113 Students



Group 3C recorded the highest achievement for both learning outcomes, with 79.19% for PLO4 and 83.69% for PLO11. This indicates that students in this group demonstrated the strongest overall performance and may have

benefited from effective teamwork, active participation, or better understanding of course requirements. Similarly, Group 3D also performed well, achieving 77.18% in PLO4 and 82.06% in PLO11, showing balanced and relatively strong attainment across both outcomes. Group 3A achieved moderate results, scoring 74.55% for PLO4 and 79.40% for PLO11. The higher percentage in PLO11 suggests that students were more successful in demonstrating competencies related to communication, collaboration, or applied learning skills measured under this outcome.

In contrast, Group 3B displayed a different trend, obtaining 76.47% for PLO4 but only 73.37% for PLO11, which is the lowest PLO11 score among all groups. This may imply that although the group managed technical or cognitive tasks measured by PLO4 effectively, they faced challenges in aspects related to PLO11 such as teamwork, presentation, or practical application. The graph further reveals that the largest gap between PLO4 and PLO11 appears in Group 3D and Group 3A, where PLO11 is significantly higher than PLO4. Such differences may indicate that students are more capable of achieving collaborative or communication-based outcomes than analytical or technical competencies. Meanwhile, the inverse pattern observed in Group 3B suggests the need for additional support to improve competencies linked to PLO11.

In general, the achievement percentages for all groups remain within a satisfactory range, indicating that the course has largely succeeded in helping students attain the intended program learning outcomes. However, the variation among groups suggests differences in learning engagement, collaboration quality, or instructional effectiveness. To improve overall performance, lecturers may consider implementing more collaborative learning activities, peer interaction, and targeted academic support for groups with lower achievement, particularly Group 3B in PLO11.

Comparatively, PLO11 performance was stronger and more consistent than PLO4. This suggests that students were generally more comfortable with knowledge-based or theoretical assessments than with competency-based or application-oriented tasks. The higher variation in PLO4 may also reflect differences in individual learning styles, engagement levels, or technical capabilities during assessments. Overall, the PO assessment results indicate that the course achieved its intended educational objectives successfully. The high percentage of students obtaining grades A and above reflects positive academic performance and satisfactory attainment of the program learning outcomes. Nevertheless, continuous quality improvement measures such as additional practical exercises, collaborative learning activities, and focused guidance sessions could further enhance student performance, particularly in PLO4 where score variability was more apparent.

Relationship Between English Communication Skills and Engineering Performance

Pearson correlation analysis demonstrated a significant positive relationship between English communication skills and engineering activity performance ($p < 0.05$). Speaking and writing skills showed the strongest correlation with project presentation and technical report performance. The results support earlier findings that communication competency enhances engineering students' academic engagement and employability readiness (Ismail et al., 2025).

DISCUSSION

The findings demonstrate that communication skills significantly influence engineering activity performance among mechanical engineering students. Students with strong communication competency showed better participation in laboratory discussions, improved teamwork coordination, and greater confidence during technical presentations. The study confirms that English communication skills significantly influence engineering activity performance among Mechanical Engineering students in UiTM Bukit Besi. Engineering education increasingly requires students to interact, collaborate, and present technical information effectively in English. Students with strong English proficiency tend to participate more actively in engineering tasks and demonstrate better confidence during practical activities. Conversely, students with weaker communication skills may hesitate to engage in discussions or presentations, potentially affecting their academic and professional development. Furthermore, industrial employers prioritize communication skills alongside technical competency. Therefore, integrating communication-based learning approaches into engineering curricula could improve students' readiness for industrial environments (Ismail et al., 2025).

The grade distribution data for LCC111, LCC112, and LCC113 taken by the same cohort of students of the Faculty of Mechanical Engineering from Year 1 Semester 1 to Year 2 Semester 3 from 2024 to 2025 reveals distinct semesterly patterns in assessment outcomes that align with current trends in higher education research as shown in Figure 5. The summary of comparative percentages can be referred in Table 5. Oral communication skills were found to positively influence classroom discussions and engineering presentations. Students with stronger speaking ability could explain engineering concepts more effectively and engage actively in collaborative learning activities (Ibrahim et al., 2025). These findings are consistent with previous research indicating that communication skills enhance engineering students' self-efficacy and employability. Technical writing skills also contributed significantly to engineering report quality. Mechanical engineering students who possessed better writing competency produced clearer laboratory analyses and more systematic project documentation. This supports previous studies that highlighted the importance of communication-oriented curricula in engineering education.

Moreover, teamwork interaction skills improved project efficiency and collaborative problem-solving. Engineering activities commonly involve group-based tasks requiring active communication among team members. Students with effective interpersonal communication demonstrated stronger leadership and conflict management capabilities (Cox et al., 2010). The study also indicates that communication skills contribute to industrial readiness. Employers increasingly seek engineering graduates who can communicate technical ideas effectively in professional environments (Zogheib, 2024). Therefore, communication competency should be considered equally important as technical expertise in engineering education.

Figure 5. Graph of Grade Distribution Percentage by Course Code for a Cohort

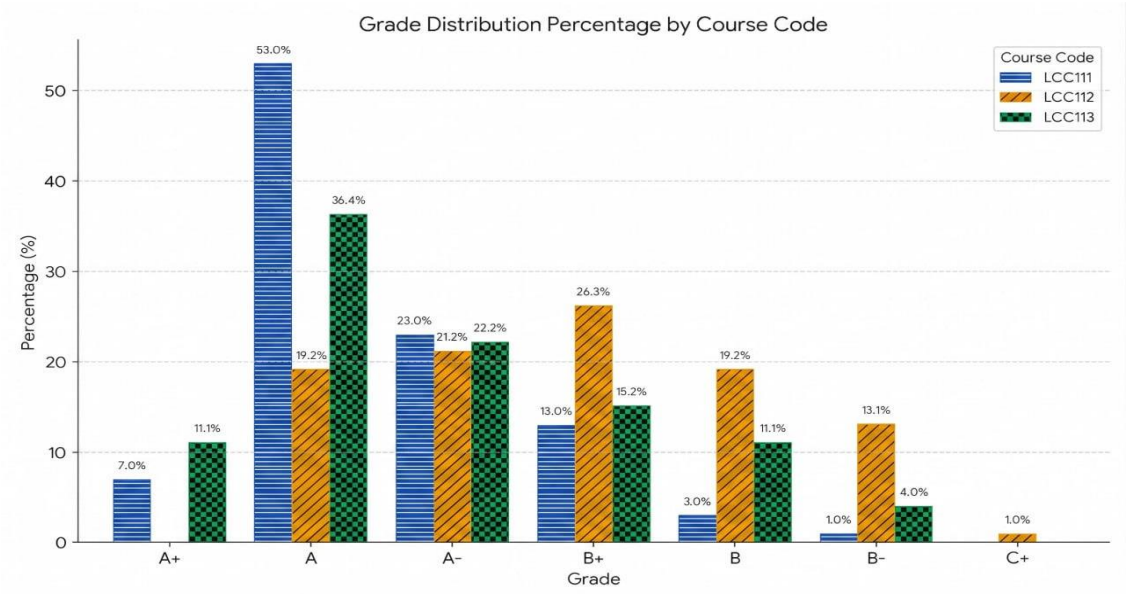


Table 5. Summary Table of Comparative Percentages

Course Code	% A or Above	Key Pattern
LCC111	60.0%	High Grade Compression (Top-heavy)
LCC112	40.4%	Broad Differentiation (Bell-shaped)
LCC113	69.7%	High Achievement Signaling (A+ Lead)

Analysis of LCC111: Grade Compression and High Achievement

In LCC111, 53.0% of students achieved a grade of "A", which is the highest concentration of top marks across all three courses. As a potential grade inflation, research suggests that such a high percentage of top grades can

be indicative of grade inflation, a pervasive global phenomenon where top marks become common, leading to a compression at the upper end of the scale (Almaghaslah, 2025; Lee et al., 2026). This compression often undermines the signaling value of grades, making it difficult for employers or graduate schools to distinguish between high-performing and mediocre students (Lee et al., 2026). In term of workload and assessment load, the high percentage of "A" grades in LCC111 which is 53.0% compared to LCC112 which is 19.2% could also reflect differences in course workload. Recent studies have shown that reducing student workload specifically the number of graded assessments can significantly increase the number of students receiving "A" final grades (Griffith & Faulconer, 2023).

Analysis of LCC112: Effective Student Differentiation

LCC112 demonstrates a more spread-out distribution, with its peak at B+ which is 26.3% of students and a substantial tail into the B and B- ranges. As distinguishing ability, academic research emphasizes that an effective assessment process should produce scores that clearly differentiate between student performance levels (Wosik, 2014.). The distribution in LCC112 suggests a higher degree of discrimination, which is a psychometric measure of how well an exam distinguishes between high- and low-performing students (Almaghaslah, 2025). Regarding subject-matter bias, the difference between LCC112 and LCC111 may also be attributed to the subject matter. Instructors in science and mathematics courses often receive lower student ratings and assign more rigorous or lower grades compared to those in humanities or arts (Klopfer et al., 2023).

Analysis of LCC113: Exceptional High-End Performance

LCC113 stands out for having the highest percentage of A+ grades where 11.1% of student of the Faculty of Mechanical Engineering in Semester 3, despite having fewer A grades than LCC111. As for A-F scaling, while LCC113 has high top-end success, it still maintains a distribution that spreads across the A- to B range. Recent longitudinal studies indicate that while grades have historically trended upward, recent years from 2021 to 2024 have seen a stabilization or even a narrowing of gaps in some contexts as assessment scales like A–F are applied more strictly to external benchmarks (Mood, 2025).

Figure 6. Campaign of ‘Wednesday is English Speaking Day’

As to support the environment with English Language practice in the UiTM Bukit Besi, the Student Development Bureau is continouly conduction a campaign entitled the "Wednesday is English Speaking Day" initiative from recent semester, aimed at encouraging the use of English in daily communication across campus. Through out the semester, the campaign features a new series of phrases to help students and staff as well in improving their

English, ranging from casual to more professional use. Two posters for the campaign as shown in Figure 6, one introducing the programme, and another with useful phrases for daily communication. Lecturers are encouraged to share these posters during class, and everyone is encouraged to use the phrases in daily interactions in supporting the campaign and in creating an English-friendly campus environment.

CONCLUSION

Communication skills significantly influence engineering activity performance among the students of the Faculty of Mechanical Engineering. Effective oral communication, technical writing, presentation skills, and teamwork interaction improve academic performance, project effectiveness, and industrial readiness. This study investigated the impact of English communication skills on engineering activity performance among Mechanical Engineering students at Universiti Teknologi MARA (UiTM) Bukit Besi and found a significant positive relationship between English proficiency and engineering-related performance.

Students with stronger English speaking and writing skills showed better participation in presentations, laboratory discussions, teamwork, and technical report preparation. The findings highlight the importance of integrating presentation activities, technical writing workshops, collaborative learning, and communication-focused courses into engineering education to strengthen students' professional competencies and employability. Future research may examine the effectiveness of AI-assisted communication training, digital learning platforms, larger sample sizes, and comparisons across different engineering disciplines in Malaysia.

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