

ROLE OF TECHNICAL ENGLISH PROFICIENCY IN ENHANCING LEARNING OUTCOMES AND EMPLOYABILITY OF STUDENTS IN TECHNICAL INSTITUTIONS

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Abstract - The research problem was founded on the use of Technical English proficiency on learning outcomes and employability to students in technical institutions. Descriptive and correlational research design was used and 150 students of engineering and polytechnic institutions were selected through a structured questionnaire. The instrument was used to measure the Technical English proficiency, learning outcomes, and employability-related skills of the students. The correlations and regression analyses were used to study the correlations and regressions of the variables. The results showed that Technical English proficiency and learning outcomes were positively correlated ($r = 0.68$), which means that higher the level of proficiency, the higher the academic knowledge of learning, the classroom engagement, and the project results. The findings also indicated that Technical English proficiency highly forecasted employability skills ($r = 0.64$), and it is therefore important in professional communication, interview preparedness, and confidence in the workplace. The study has found out that technical awareness in the form of technical English proficiency is a fundamental academic and professional skill and pointed out how systematically inclusion of technical English training in technical curriculums is needed to improve academic performance and employment of students.

Keywords: Technical English, Learning Outcomes, Employability Skills, Technical Education, Communication Proficiency.

Technical English proficiency can be used to improve learning outcomes and employability of students in technical institutions.

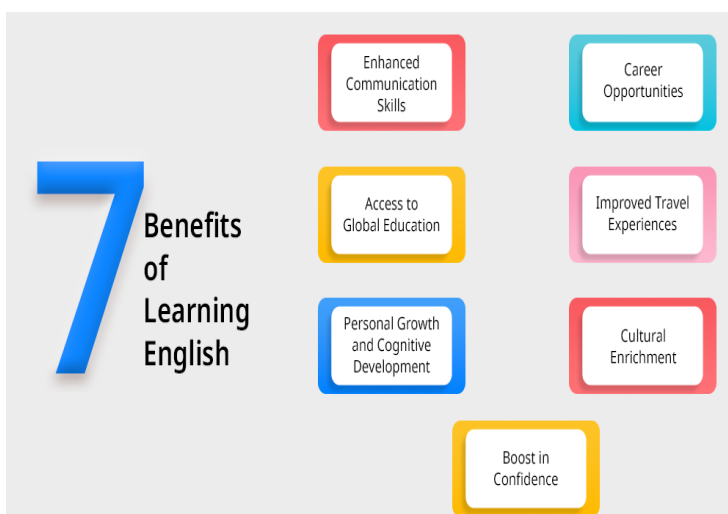


Figure 1: Impact of Learning English on Educational and Career Outcomes

1. INTRODUCTION

In an age of massive technological progress and the globalization of industries, technical education institutes will tend to come out with graduates who are technically proficient as well as those who can communicate effectively in their professional practice. English has become the common language of science, engineering, research and world trade. As a result of this, competence in the Technical English is now a principal prerequisite to learners in technical colleges. It is an important form of knowledge acquisition, learning of a complex technical phenomenon and engaging in academic and professional language. The current research investigates the extent to which the

1.1 Technical English as a Foundation for Academic Success

The English-based materials like textbooks, professional journals, software documentation, online educational tools and laboratory manuals are essential in technical education. Students not conversant with Technical English tend to experience problems in understanding subject matter, instructions, and project and assessment-related technical knowledge. Conversely, students who possess good Technical English abilities are also showing better conceptual understanding, better classroom interaction and superior performance. Language proficiency can therefore be used as a cognitive aid that facilitates

analytical thinking, problem solving and proper construction of knowledge, all of which are key learning outcomes in technical fields.

1.2 Growing Importance of Technical English in Employability

The contemporary workforce is becoming more and more in need of professionals that can articulate technical concepts to broad audiences, work across disciplines, and record processes in a manner that is free of errors. As always, employers mention communication skills in the list of the most demanded qualities in engineering and technology graduates. Proficiency in technical English improves the performance of the students in terms of interviews, group discussions, project presentations and work-related interactions.

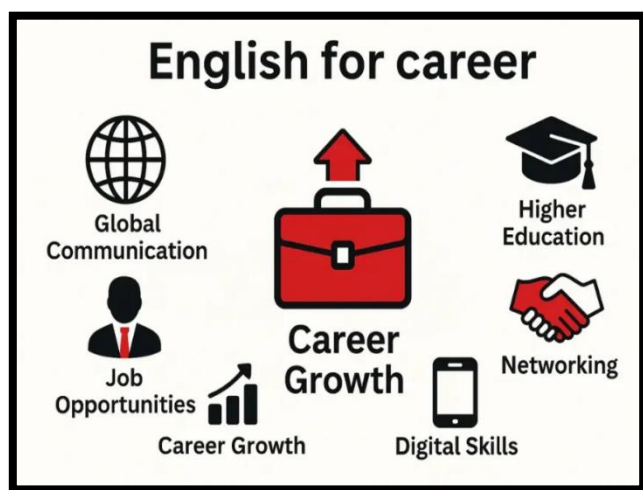


Figure 2: Importance of English Language for Career Development

It also allows graduates to fit in the multinational work environment, interact with international clients and make a significant contribution to the innovation-based industries. Thus, Technical English is not only a compulsory academic requirement but also a determining element in the employability and the further career growth.

1.3 Rationale and Scope of the Study

Technical English, although it is acknowledged to be an important language, is commonly viewed as an auxiliary subject instead of a part of the technical education. This alienates the academic potential and professional preparedness of the students. The current research aims to investigate the effects of Technical English proficiency on learning outcome as well as employability of learners in technical institutions. The study seeks to bring to the fore the academic and professional implications of language competence and therefore argues that Technical English should be systematically incorporated into Technical curriculums and further points out that Techniques English should be used to develop industry-ready graduates.

2. REVIEW OF LITERATURE

The literature of the past had highlighted the increased significance of language proficiency, integration of technologies and the role of institutional support in determining outcomes of learning in students and their employability especially in technical and higher educational settings.

An et al. (2021) explored the purpose of self-regulated learning of English language with technological assistance and its relationship with English self-efficacy, enjoyment, and the outcome of learning. Their research found out that students who participated in technology enabled language learning exercises had elevated self-efficacy and learning pleasure about learning English. These emotional aspects were observed to be largely correlated to better learning performance. The researchers made a conclusion that the technology-enhanced learning environment in English classrooms had a positive impact on student motivation, autonomy, and achievement. Their results indicated that the organized technological assistance had empowered students to have command of the English language which in effect enabled them to have superior understanding and overall effectiveness in learning.

Jopp (2020) undertook a case study of a technology enhanced learning project in an attempt to support

authentic assessment in higher education. The researchers concluded that the combination of digital technologies and real activities had enhanced the interest and thinking capabilities among students and their learning skills. Real life, application-based examinations enabled students to show more comprehension than the traditional exams. The results showed that the use of technology in teaching practices had improved the communication skills, the problem-solving skills, and the academic confidence of the students. This paper has pointed out that technology-based learning environments had been very instrumental in developing transferable skills that were closely intertwined with academic achievement and employability.

Mumbe (2020) tested how the choice of an institution affects the acquisition of employable skills by the students in the technical and vocational training institutions in Kenya. The research concluded that the design of the curriculum, pedagogies, access to learning resources, and the institutional support systems had consequently had a great impact on the development of the employability skills on the part of the students. One of the main employability attributes that had been affected by institutional practices was communication competence especially in English. Mumbe also made the conclusion that the institutions that focused on practical training and language development and learning environments geared to industry produced better graduates who got ready to enter the labor market. The study highlighted the fact that technical knowledge was inadequate without good language and communication skills.

Nisha and Rajasekaran (2018) has provided a detailed overview of employability skills and discussed the types of competencies graduates need to have to be successful in the contemporary labor market. Their research had found that communication skills, critical thinking, teamwork, problem-solving capacity, and adaptability are some of the main employability qualities. The authors had pointed out that proficiency in language was at the centre of helping the graduates to clearly convey ideas, team work and effectively ensure that they operate within

the professional settings with competence. The review had determined that employability was not as reliant on academic qualification as before, but rather more and more on soft skills, and communication competence was the bedrock of most professional skills.

Okolie et al. (2020) examined the reasons why higher education institutions had been experiencing problems in teaching generic employability skills effectively. Their analysis had discovered that most institutions had oriented their efforts to disciplinary knowledge and had paid very limited attention to transferable skills like communication, professionalism and interpersonal competence. The researchers had indicated shortages between industry expectations and graduate skill levels especially in aspects behind workplace communication and professional conduct. They had already determined that there were structural constraints, curriculum inflexibility, and lack of proper pedagogical methods that had stopped the attainment of employability skills. The paper had suggested that in order to incorporate communication and language development in the academic programs, there was urgent need that institutions of higher learning needed to redesign their curriculums and embrace new teaching methods.

3. RESEARCH METHDOLOGY

This part describes the research design, population, sampling process, research instruments, data collection process, and analytical techniques that will be used to examine the issue of Technical English proficiency in improving learning outcomes and employability of students in technical institutions.

3.1 Research Design

The research design used in the study was descriptive and correlational research design to determine the degree of Technical English proficiency amongst students and to investigate the relationship between the degree of Technical English proficiency and the learning outcomes and employability. This design was

appropriate in the establishment of patterns, relationship and trends among the study variables. Questionnaires were sent to the 150 students chosen after getting approval of the institutional authorities.

3.2 Population of the Study

The study population comprised of technically oriented institutions students, such as engineering institutions and polytechnic institutions. The reason why such students were selected is because they are constantly exposed to Technical English in terms of academic training, laboratory sessions and project reporting. The subjects were made aware of the research objective and guaranteed a sense of confidentiality. The completed questionnaires were gathered and made in order to be analysed.

3.3 Sample Size and Sampling Technique

The study selected 150 students as a total sample. A stratified random sampling technique was employed in selecting the participants so as to have good representation of the various academic years and the technical disciplines. This methodology was used to ensure the capture of the various academic events and language proficiency which enhanced the reliability and generalizability of the results.

3.4 Research Instruments

The use of a structured questionnaire with four sections was used in data collection:

- Section A: Demographic details
- Section B: Technical English proficiency (reading, writing, speaking, technical vocabulary, and comprehension)
- Section C: Learning outcomes (academic understanding, classroom participation, project performance, and independent learning)
- Section D: Employability skills (professional communication, interview readiness, teamwork, and workplace confidence)

The answers were documented on a five-point Likert scale with the categories of Strongly Disagree, Strongly Agree. Subject experts went through the questionnaire and pilot-tested it to ensure content validity and reliability.

3.5 Data Collection Procedure

3.6 Techniques of Data Analysis

The analysis of data was performed with the help of descriptive statistics (frequency, percentage, mean, and standard deviation) and inferential statistics. The correlation analysis was used in order to analyze the correlation between the Technical English proficiency and the learning outcomes and regression analysis was used to identify which effect of Technical English predicted the employability. Tables and charts were used to present the results.

3.7 Ethical Considerations

The process of participation was voluntary, all of the respondents were informed on participation and anonymity was provided. Ethics were followed in the research, and the data were utilized exclusively to academic purposes.

4. RESULTS AND DISCUSSION

This section analyzes and interprets the results of the data obtained on 150 students of technical institutions. All the results are structured according to the study objectives and dwell on the Technical English proficiency, learning outcomes, and employability of the students. Analysis of the data was done using both descriptive and inferential statistics.

4.1 Demographic Distribution of Respondents

The demographic review showed that the students of all levels of study were represented sufficiently in the study. This guaranteed academic exposure and technical experience.

Table 1: Distribution of Students by Academic Year (N = 150)

Academic Year	Number of Students
First Year	38

Second Year	41
Third Year	36
Final Year	35

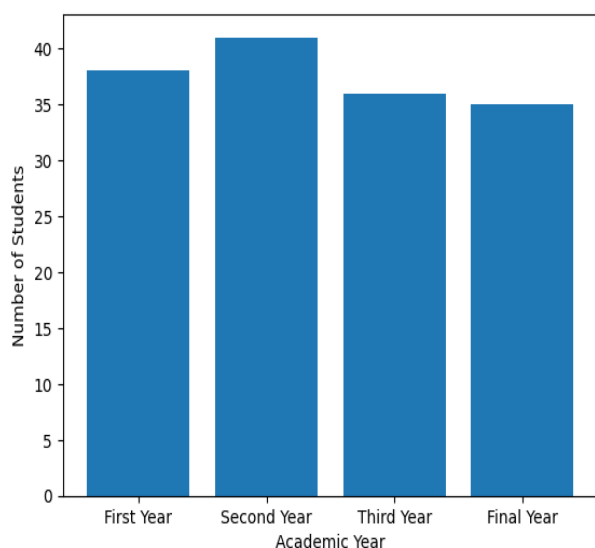


Figure 1: Graphical Representation of Distribution of Students by Academic Year

The results were made more reliable by the fact that the distribution was almost the same across the academic years. Different stages of technical education have different degrees of communication in technical sense. Hence, this equal representation enabled the study to provide an overall image of the effect of Technical English proficiency on the early learning outcomes and high employability preparedness.

4.2 Levels of Technical English Proficiency

The answers of the students concerning reading, writing, speaking, technical vocabulary, and comprehension were summed up to ascertain the level of proficiency of their Technical English.

Table 2: Levels of Technical English Proficiency

Proficiency Level	Number of Students	Percentage
Low	32	21.3%
Moderate	68	45.3%

High	50	33.4%
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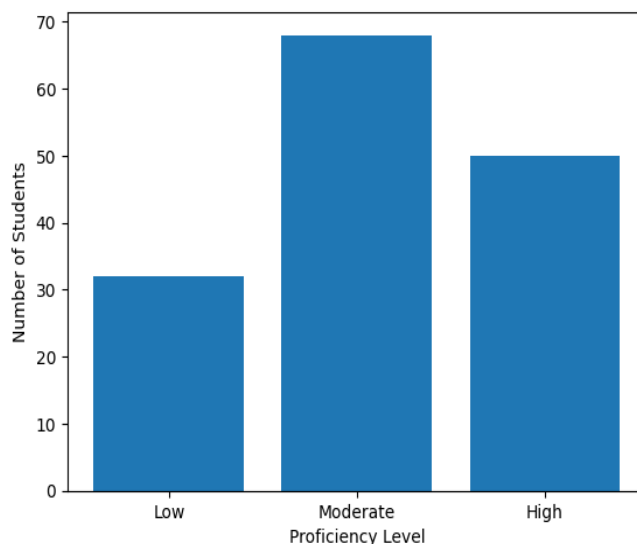


Figure 2: Graphical Representation of Levels of Technical English Proficiency

The findings revealed that most students (78.7) were in the moderate and high proficiency. Nevertheless, there was a high percentage (21.3) of low-level proficiency that required intensive Technical English interventions. Learners that were more proficient said they were more confident about their ability to understand lectures, write technical reports, and engage in academic discussions. This result supported the significance of Technical English as the basis of successful studies in technical subjects.

4.3 Relationship between Technical English Proficiency and Learning Outcomes

The correlation analysis was done to test the correlation between Technical English proficiency and learning outcomes in the form of academic understanding, classroom participation, project performance and independent learning ability.

Table 3: Correlation between Technical English Proficiency and Learning Outcomes

Variables Compared	Correlation Coefficient (r)
Technical English & Learning Outcomes	0.68

Technical English & Employability Skills	0.72
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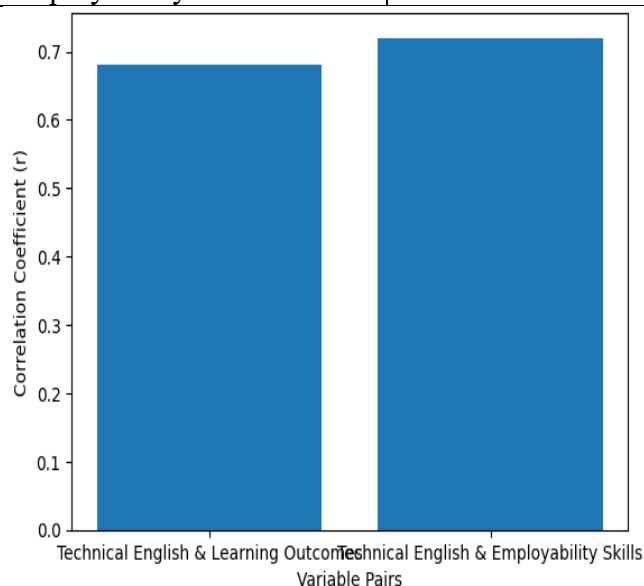


Figure 3: Graphical Representation of Correlation between Technical English Proficiency and Learning Outcomes

Technical English proficiency and learning outcomes were significantly and positively associated ($r = 0.68$). This implied that more proficient students in the language were also more likely to have a greater conceptual knowledge, increased classroom learning and better grades. These results indicated that Technical English was a mental and communication device that facilitated and enhanced learning, critical thinking, and academic articulation. The findings affirmed that proficiency in languages was a great boost to the capacity of students to access, process and utilize technical knowledge.

4.4 Influence of Technical English Proficiency on Employability

The predictive value of technical English proficiency on the employability skills that included professional communication, interview preparedness, teamwork, and confidence at the workplace was investigated through regression analysis.

Table 4: Regression Analysis Showing Impact of Technical English on Employability

Predictor Variable	Beta Value (β)	R ² Value
Technical English Proficiency	0.64	0.51

The regression outcomes demonstrated that employability skills were highly predicted by Technical English proficiency (0.64). The coefficient of R^2 was equal to 0.51, which shows that Technical English proficiency explained about 51 percent of the change in the employability competencies. This proved that language competence was not only a supportive ability, but a significant determinant of professional readiness of students. Students who are more advanced said that they were more confident with interviews, clearer professional communication, and teamwork abilities. These results gave a strong argument that the mastery of Technical English was critical in the development of industry graduates.

4.5 Overall Discussion

The general results clearly revealed that technical English proficiency positively affected significantly the outcomes of learning as well as employability of students in technical institutions. Students with more impressive Technical English skills presented improved academic understanding, active and confident in professional situations. The high levels of correlations and the significant regression results were the proof of the fact that language proficiency was perceived as a mediator between the knowledge of technical aspects and the professional practice. The findings also revealed that technical training institutions urgently need to incorporate Technical English education in the primary programs to improve academic performance and employability.

5. CONCLUSION

This investigation came up to find out that technical English proficiency is a crucial and multidimensional factor that improves the learning outcomes and the employability of students at technical institutions. The results revealed that students who possessed a better

level of technical English understanding demonstrated better academic understanding, better conceptual comprehension, and better engagement with technical material to be capable of interpreting textbooks, research materials, laboratory manuals, and digital information. The findings also affirmed that there was a strong positive correlation between the level of English proficiency in technical and employability since students who were better in their language proficiency will be more assured about their professional communication, technical documents, presentation skills, teamwork, and performance in an interview. The professional level of English language abilities was also known to facilitate growth in critical thinking, problem-solving skills, and lifetime learning skills which are very imperative in fast-changing technical sectors. In general, the research was able to confirm that technical English is not a secondary course but an essential academic and professional skill. As such, it is necessary to have systematic incorporation of technical English in technical curriculum to enhance academic performance, close the gap between technical education and industry needs and generate industry oriented graduates who can compete favorably with other workers in the global market.

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