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*Article*

# Means of Developing Productive Skills in English Teaching in Mechatronics and Their Characteristics

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**Abstract:** In order to meet the increasing demand for English proficiency in international technical sectors, the study investigates how mechatronics students might build productive English language abilities. There is still a lack of efficient approaches to English for Specific Purposes (ESP) that are suited to the unique requirements of students, even with the growing integration of English in engineering courses. A review of the literature, questionnaires, interviews, and project-based teaching interventions were all used in the mixed-methods approach. Through role-playing, technical writing, and group discussions, students' communication and technical English skills significantly improved, according to the results. This study emphasizes how crucial flexible, interactive teaching methods are for improving language learning. The results provide insights on how to provide efficient English instruction in technical education while highlighting the necessity of ESP-focused approaches to prepare students for professional settings.

**Keywords:** English for specific purposes, ESL, original attitude, mechatronics

## 1. Introduction

English stands out as the main tool for communication and knowledge exchange in the field of mechatronics. Increasing the role of English in the process of training personnel is important in preparing students for global technologies and innovations. More than 70% of the global workforce requires personnel with the ability to communicate in English, which requires a review of teaching strategies.

This article analyzes modern methods and tools for developing productive skills in teaching English in the mechatronics field. Combining practical and theoretical approaches in the teaching process will help develop advanced skills for students. In the future, specialists working in the mechatronics field should be trained to have high-level communication skills in English and be globally competitive.

This study focuses on the attitudes of mechatronics students towards learning English for specific purposes in order to provide insight into the reasons for learning English, which is important from an ESP perspective.

The main reason for including English in the curriculum is that English has become the language of international communication. In addition, professional books, magazines and other resources are often only available in English. Given that the content of English lessons in primary and secondary schools is usually limited to a general English course, many students are not exposed to engineering terminology and professional literature in English until they enter their first year of study.

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**Literature Review**

An analysis of the literature on teaching English in mechatronics helps to identify important principles for developing productive skills in the teaching process. Various studies show that practical approaches to the teaching process, such as project-based learning and laboratory work, contribute to achieving high performance for students. For example, in a 2022 study, more than 85% of students who used project-based learning methods reported that they had improved their knowledge (Education Research International, 2022).

Also in the literature, a 2018 study found that laboratory work plays a role in developing English communication skills. These activities guide students to communicate in technical English, solve problems, and develop teamwork skills. Studies show that students who participated in practical activities gained 60% more effective skills than those who did not (Journal of Engineering Education, 2018).

The methods and approaches analyzed in this article are based on a research methodology used in the process of teaching English in the field of mechatronics. The analysis process included the following main steps:

A review of existing scientific literature, articles, and research findings on mechatronics and English language teaching was conducted. Academic journals, online libraries, and institutional research reports were used in this process.

Student and teacher feedback was collected through questionnaires and interviews to assess the practical teaching methods. This information helped determine what skills students were developing during the teaching process.

The data obtained was analyzed using statistical methods. In this process, correlation and regression analysis were used to study the effectiveness of teaching methods. Studies show that project-based approaches and practical exercises can increase student learning by 40-50% (International Journal of STEM Education, 2021).

## 2. Methodology

This study employed a mixed-methods research design to investigate the attitudes of mechatronics students toward learning English for specific purposes and to evaluate the effectiveness of teaching strategies in developing their productive language skills. The methodology encompassed the following key steps:

**1. Literature Review**: A comprehensive review of existing literature on teaching English in technical fields, specifically in mechatronics, was conducted. Sources included peer-reviewed journals, academic books, and institutional reports to identify best practices and challenges in English for Specific Purposes (ESP) education.

**2. Data Collection**:

- Surveys and Questionnaires: Structured questionnaires were distributed to mechatronics students to gather data on their perceptions, challenges, and preferences regarding learning English.
- Interviews: Semi-structured interviews with both students and instructors were conducted to gain deeper insights into the practical implementation of teaching methods and the specific needs of learners.

**3. Teaching Interventions**: The study incorporated a series of interactive and project-based learning activities designed to enhance productive skills. These activities included:

- Role-playing technical scenarios to improve spoken English.
- Writing assignments such as technical reports and project summaries to develop writing skills.

- Group discussions to foster collaboration and communication in English.

**4. Data Analysis**:

- Quantitative data from the surveys were analyzed using statistical tools, including correlation and regression analyses, to measure the impact of different teaching strategies on student performance.
- Qualitative data from interviews were coded thematically to identify recurring patterns and unique insights.

**5. Evaluation Metrics**: The effectiveness of the teaching interventions was evaluated based on:

- Improvement in students' performance in English proficiency tests.
- Self-reported confidence levels in using English for technical communication.
- Feedback from instructors on student engagement and skill development.

This methodological framework ensured a holistic approach to understanding and addressing the needs of mechatronics students in learning English, aligning with both academic and professional objectives.

## 3. Results

The aforementioned ideas and techniques of teaching strategy are a collection of fundamental educational elements. "These components enhance the overall integration process in English instruction, thereby progressively advancing the teaching-learning procedures."

The assessment of each teacher's professional competencies in English instruction involves evaluating their lesson organisation, adherence to structural strategic principles, and proficiency in successfully implementing methodological principles throughout the sequential phases of teaching. Thus, numerous criteria govern the organisation of a quality lesson, which are essential for the complete attainment of the objectives set by both the instructor and the pupils.

Utilising many approaches throughout a lecture is unequivocally impractical, and employing a single method comprehensively and efficiently is a complicated endeavour. Consequently, we cannot determine which method is excessively complex or particularly beneficial for educators; instead, we assert that the most suitable method and approach to instruction is that selected by the professors and teachers, informed by the quality and structure of their lessons, thereby enhancing student outcomes and the overall effectiveness of the learning environment.

Diversity and adaptability are significant attributes of the classroom setting. In English instruction, the array of contemporary pedagogical technologies, strategies, methods, and principles serves as the benchmark for structuring interactive lessons and cultivating sufficient interest, thereby enhancing the positive attributes of individual potential through cooperative methods. Each method or technique selected by the educator not only amplifies lesson effectiveness but also augments student reproducibility, aligning with the educator's objective of advancing towards their goals. The emphasis is on solidifying and maintaining the coherence of the goals and objectives of each principle to enhance the student's scientific potential, while international and national collaboration fortifies the contemporary teaching strategies of educators and broadens the principles of experiential learning.

## 4. Discussion

Contemporary classrooms are seen as an innovative method of instruction. The assessment of professors' and instructors' knowledge, talents, and skills is based on the success of the selected principle or approach in each class, as shown by the lesson outcomes and the indicators attained by students. Modern pedagogical technologies include not only their use but also the explicit articulation of the objectives behind the employed methodologies and concepts to enhance educational efficacy. The substance and categorisation of teaching techniques and principles are elucidated as follows:

Pedagogical principle. The aggregate of concepts, convictions, and techniques for natural learning used in the classroom.

Pedagogical approach. A particular instructional framework seen as a comprehensive strategy designed to attain the desired objective.

Pedagogical approach. An organised method of doing a task. The sequential methodology of the logical framework. A very efficacious approach. The instructional method is a creative strategy based on a well delineated workflow, specialised activities, and job execution.

The concept of personalised education. The learner is obliged to work independently, with the objective of resolving the issue scenario autonomously. The concept of integration. This concept urges the educator to integrate his subject with others, so establishing a cohesive internal and external order within the environment. The concept of engagement. This theory posits that in an interactive classroom, student participation is heightened while the teacher's role diminishes. Students are permitted to engage with the instructor and their peers.

## 5. Conclusion

In conclusion, each of the aforementioned pedagogical approaches elucidates specific student competencies; for instance, deductive and inductive learning foster both internal and external knowledge skills, thereby promoting creative thinking, learning, and analytical methods. When the instructor implements chosen techniques according to the purpose-principle of the planned lesson-workshop in an individual or team-based learning format, the overall image of revival, or development, progressively enhances. since educators, we recognise that we cannot confine ourselves to a singular approach in an English class, since this may disadvantage some pupils.

The educator must eschew a paradigm of homogeneity and continually enhance the efficacy of new capabilities. Diversity and flexibility are the fundamental attributes to include in any instructional context. A certain degree of commitment is attained by cultivating the student's capacity for role-based thinking, systematic study, and deriving a conclusive outcome, while the educator enhances the student's performance via summarisation and assessment.

The educator tailors the lesson according to his pedagogical capabilities, choosing and using methods and procedures guided by his own judgement, resulting in the student excelling in this process. The mechanisms of collaboration between the educator and the learner are fundamental to the efficacy and productivity of contemporary educational approaches.

Contemporary pedagogical technology enhance instructional methods, particularly comparative teaching, which elevates the progressive condition. Should the aforementioned tactics or strategies be used in alignment with the lesson, the student's eagerness to learn will be completely satisfied by the class's conclusion. on conclusion, a comprehensive training grounded on methodologies becomes the foundation of a collaborative productive approach for both performers.

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