

**Investigating the role of Blended Learning in Supporting English Communication and Professional Readiness.
Case Study of Second -Year Textile Engineering Students at Relizane University.**

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Dedication

This work is dedicated to those whose unwavering love, support, and inspiration have been constant throughout my life's journey.

Mrs.SaidaneMahdjoubaHayet

.....

I dedicatethisthesisto

Mybelovedparents,fortheirunconditionallove,patience,andconstantsupportthroughout my journey. Their belief in me has been my greatest motivation.

Ialsodedicatethisworktothememoryofmydeargrandfather,whosewisdom, kindness, and guidance will forever remain in my heart and continue to inspire me every day.

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Abstract

The increasing demand for English communication skills in technical and professional contexts has highlighted the need for more effective English for Specific Purposes (ESP) instruction. This dissertation investigates the role of blended learning in supporting English communication skills and professional readiness among second-year Textile Engineering students at the University of Relizane. It seeks to answer three main questions: (1) What communication challenges do Textile Engineering students face in academic and professional contexts? (2) How is blended learning implemented in ESP instruction? (3) To what extent can blended learning enhance students' communication skills and bridge the gap between theoretical learning and workplace requirements?. The study adopts a mixed-methods case study approach involving second-year Textile Engineering students at the University of Relizane. Data were collected through student questionnaires and classroom observations and analyzed using descriptive quantitative analysis and qualitative interpretation. The findings reveal that blended learning positively supports the development of English communication skills, technical vocabulary acquisition, learner autonomy, and professional readiness by providing more interactive and authentic learning experiences. Based on these findings, the study recommends a wider integration of blended learning strategies into ESP curricula and the design of communication-oriented activities that better prepare engineering students for academic and workplace demands.

Keywords: Blended Learning; ESP; Communication Barriers; Professional Readiness; Textile Engineering Students; Technical Vocabulary; Workplace Communication.

Résumé

La demande croissante de compétences en communication anglaise dans les contextes techniques et professionnels a mis en évidence la nécessité d'un enseignement de l'anglais de spécialité (ESP) plus efficace. Cette thèse examine le rôle de l'apprentissage mixte dans le développement des compétences en communication anglaise et la préparation professionnelle des étudiants de deuxième année en génie textile à l'Université de Relizane. Elle vise à répondre à trois questions principales : (1) Quels sont les défis de communication rencontrés par les étudiants en génie textile dans les contextes académiques et professionnels ? (2) Comment l'apprentissage mixte est-il mis en œuvre dans l'enseignement de l'ESP ? (3) Dans quelle mesure l'apprentissage mixte peut-il améliorer les compétences en communication des étudiants et combler le fossé entre l'apprentissage théorique et les exigences du monde du travail ? L'étude adopte une approche mixte, basée sur une étude de cas, auprès d'étudiants de deuxième année en génie textile de l'Université de Relizane. Les données ont été recueillies au moyen de questionnaires destinés aux étudiants et d'observations en classe, puis analysées par une analyse quantitative descriptive et une interprétation qualitative. Les résultats révèlent que l'apprentissage mixte favorise le développement des compétences en communication anglaise, l'acquisition de vocabulaire technique, l'autonomie des apprenants et la préparation professionnelle en proposant des expériences d'apprentissage plus interactives et authentiques. À partir de ces résultats, l'étude recommande une intégration plus large des stratégies d'apprentissage mixte dans les programmes d'anglais de spécialité et la conception d'activités axées sur la communication afin de mieux préparer les étudiants en ingénierie aux exigences académiques et professionnelles.

Mots-clés : Apprentissage mixte ; Anglais sur objectifs spécifiques (ESP) ; Barrières de communication ; Préparation professionnelle ; Étudiants en génie textile ; Vocabulaire technique ; Communication en milieu de travail.

ملخص

أدى تزايد الطلب على مهارات التواصل باللغة الإنجليزية في السياقات التقنية والمهنية إلى تسليط الضوء على الحاجة إلى تدريس أكثر فعالية للغة الإنجليزية لأغراض محددة (ESP). تبحث هذه الأطروحة دور التعلم المدمج في دعم مهارات التواصل باللغة الإنجليزية والاستعداد المهني لدى طلاب السنة الثانية في هندسة النسيج بجامعة ريليزا. وتسعى للإجابة عن ثلاثة أسئلة رئيسية: (1) ما هي تحديات التواصل التي يواجهها طلاب هندسة النسيج في السياقات الأكاديمية والمهنية؟ (2) كيف يُطبَّق التعلم المدمج في تدريس اللغة الإنجليزية لأغراض محددة؟ (3) إلى أي مدى يُمكن للتعلم المدمج أن يُحسِّن مهارات التواصل لدى الطلاب ويسد الفجوة بين التعلم النظري ومتطلبات سوق العمل؟ تعتمد الدراسة منهج دراسة الحالة المختلط، الذي يشمل طلاب السنة الثانية في هندسة النسيج بجامعة ريليزا. جُمعت البيانات من خلال استبيانات الطلاب وملاحظات الصف، وحُلَّت باستخدام التحليل الكمي الوصفي والتفسير النوعي. تُشير النتائج إلى أن التعلم المدمج يدعم بشكل إيجابي تطوير مهارات التواصل باللغة الإنجليزية، واكتساب المصطلحات التقنية، واستقلالية المتعلم، والاستعداد المهني، وذلك من خلال توفير تجارب تعليمية أكثر تفاعلية وواقعية. بناءً على هذه النتائج، توصي الدراسة بتوسيع نطاق دمج استراتيجيات التعلم المدمج في مناهج اللغة الإنجليزية لأغراض الخاصة، وتصميم أنشطة تركز على التواصل تُهيئ طلاب الهندسة بشكل أفضل لمتطلبات الدراسة والعمل.

الكلمات المفتاحية: التعليم المدمج؛ الإنجليزية لأغراض خاصة (ESP)؛ عوائق التواصل؛ الجاهزية

المهنية؛ طلاب هندسة النسيج؛ المصطلحات التقنية؛ التواصل في مكان العمل.

List of Abbreviations

- **ATC:**AirTrafficControllers
- **B-Learning:**BlendedLearning
- **DOI:**DigitalObjectIdentifier
- **EFL:**EnglishasaForeignLanguage
- **ELF:**EnglishasaLinguaFranca
- **ELT:**EnglishLanguageTeaching
- **EMI:**EnglishasaMediumofInstruction
- **ENS:**ÉcoleNormaleSupérieure
- **ESP:**EnglishforSpecificPurposes
- **F2F:**FaceToFace
- **ICAO:**InternationalCivilAviationOrganization
- **ICT:**InformationandCommunicationTechnology
- **IVR:**ImmersiveVirtualReality
- **LMS:**LearningManagementSystem
- **PCST:**ProcessControlSystemsTraining
- **SPSS:**StatisticalPackagefortheSocialSciences
- **URL:**UniformResourceLocator

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English has become the dominant intercultural language in today's world due to various reasons, essentially the economic one, which is the reflection of the political and industrial power of developed countries. The English language is used in almost all fields, especially in science, technology, information and communication, business regulation, and international trading, this shows that English plays an essential role in global communication and professional fields. In this respect, English is no longer considered merely as a foreign language, but rather as an indispensable means of communication and a necessary tool for academic and professional success.

1. Background of the Study

By the implementation of the different levels of integration and with the globalization process, world countries found themselves implicated in an international socio-economic structure where English is the commonly used language and referred to as the lingua franca of the modern era. Algeria is by no means an exception, particularly with its guided insertion into globalization and its growing interest in higher education, industry, and international cooperation. Therefore, the English language is starting to have a specific position in Algerian society and especially in technical and professional domains.

During the recent decades, the Algerian educational system has integrated the teaching of English at different levels in order to prepare future generations to be active actors in national and international scenes, this reflects the growing role of English in Algerian education under globalization, especially within higher education systems, where it is increasingly introduced to prepare students for academic and professional demands. At university level, English for Specific Purposes (ESP) has been introduced in several departments in order to respond effectively to the growing demand formulated by workplace managers, researchers, and professionals. Accordingly, English language teaching programmes and syllabuses were adjusted to reach this aim.

At the University of Relizane, Textile Engineering students study many subjects in English. They follow lectures, technical texts, machine instructions, and written study materials in English. The goal is to help them learn the terminology related to their field and improve their understanding. However, despite this exposure, many students cannot speak or

communicate effectively in oral situations. In class discussions, internships, and daily conversations, they often speak Arabic instead of English.

In response to such challenges, new teaching approaches have been introduced in higher education. Among these approaches stands blended learning, which combines traditional face-to-face teaching with online learning experiences. This mode of instruction provides learners with greater flexibility and more opportunities to practise English beyond the limits of the classroom. Through digital platforms, students may interact, exchange ideas, access authentic materials, and develop their communication skills in a more autonomous and continuous manner.

It seems, then, urgent for the researcher to investigate the role of blended learning in improving English communication skills and enhancing professional readiness among Textile Engineering students at the University of Relizane.

2. Statement of the Problem

This limited use of English in real situations leads to a clear gap between students' theoretical knowledge and their ability to use the language in reality. While many understand texts and technical terms, they find it difficult to express themselves through speaking. This problem affects their self-confidence and makes their participation weak in discussions and presentations. Ultimately, this gap may affect their job readiness, especially in companies and factories that care deeply about communication skills.

3. Research Questions

1. What are the main English communication difficulties experienced by Textile Engineering students in academic and training contexts?
2. How do students use English for communication in classrooms and during training periods?
3. To what extent can blended learning help Textile Engineering students develop their English communication skills and improve their professional readiness?

4. Research Hypotheses

1. Textile Engineering students experience significant difficulties in oral communication in English.
2. English is not frequently used for improving spoken interaction despite being the language of instruction.
3. Blended learning can help students increase their interest in learning English, enhance their communication skills and strengthen their professional readiness.

5. Aims and Objectives

1. Investigate the role of blended learning in supporting English communication and enhancing professional readiness among Textile Engineering students at the University of Relizane.
2. It seeks to explore the challenges students face and examine their use of English in academic and training contexts.
3. Evaluate how blended learning can contribute to improving their communication skills.

6. Significance of the Study

The significance of this study lies in highlighting the importance of blended learning in improving English communication skills and professional readiness among Textile Engineering students. It also attempts to provide insights into the communication challenges students face in academic and professional contexts and emphasizes the need to bridge the gap between theoretical learning and workplace requirements.

7. Structure of the Thesis

This dissertation consists of three chapters. The first chapter provides a theoretical framework to the study through reviewing the literature and providing insights, focusing on English in technical fields, communication challenges, and blended learning. The second chapter is devoted to the practical facet of the study; it includes a description of the research design and methodology, including the sample of the study, the research tools, and displays and analyzes the data of both the qualitative and the quantitative findings. Chapter three provides the summary of the main findings, hitting its implications more deeply, profoundly, and from a wider perspective, followed by discussion, recommendations, and suggestions for further research.

Chapter One

Introduction

The prevalent use of the English language in engineering and technical fields is in constant expansion. This reality is reflected in different domains where English is considered as a working tool and a means of communication. English is no longer just a university subject, but an essential skill for engineering students in their future careers, especially in professional communication and safety-related situations. However, between what they learn in class and what is expected in real workplace settings, a gap often exists. The knowledge they gain during their studies does not always align with practical requirements. In many situations, traditional teaching methods are not enough to prepare students for communication needs, especially in technical fields.

Accordingly, this chapter aims to give an idea of the gap between theory and practice in relation to English use in technical fields. It also provides an overview of the role of English communication in engineering contexts and identifies the main difficulties encountered by engineering students, which are related not only to linguistic factors but also to psychological ones such as lack of confidence in oral production.

It also discusses the idea of professional readiness and how students gradually move from being learners to becoming future professionals.

For this reason, blended learning is presented as an approach that can help deal with these issues. This chapter does not only define blended learning, but also looks at how it is implemented, the various models it covers, and the tools that support it. The purpose is to explore whether this method supports students in improving their communication skills and be more prepared for real work situations. Finally, this chapter shows how blended learning may help reduce the gap between what is learned in the classroom and what is required in professional life.

1.1 English in Technical and Professional Fields

In today's globalized world, English has become the main global lingua franca across various professional landscapes (Crystal, 2003). Its influence is especially strong in specialized fields such as science, technology, aviation, and international business. Within the fields of science and engineering, English is no longer considered just a secondary language but a key tool for accessing, sharing, and demonstrating technical knowledge. As Crystal (2003, p. 7) states, "there is the closest of links between language dominance and economic, technological, and cultural power," this means that the spread of English is closely connected to the growth of international industries and technological development. Therefore, professionals who master English are more capable of participating in global technical and scientific communities.

According to Kankaanranta and Louhiala-Salminen (2013), English plays a crucial role in industrial and technical sectors for several reasons. First, it serves as the primary medium of global communication, enabling effective collaboration among multinational teams. In today's interconnected world, sharing technical knowledge across different languages and cultures has become essential for the success of international projects. English is also widely used in high-risk industries, such as the oil and gas sector, where safety and operational efficiency depend on clear and accurate communication. In these contexts, misunderstandings can have serious consequences, making it essential for team members to understand procedures and instructions in order to prevent accidents and maintain safety standards.

English is strongly linked with access to scientific research, as the majority of scientific books, journals, and international publications are written in English (van Weijen, 2021). This means that proficiency in the language is necessary to stay updated with ongoing technological advancements. As a result, it plays an important role in professional development and opens up more career opportunities. People who are able to use technical English can understand manuals and reports more easily, which gives them better chances of working in international environments and different companies. According to Medjralou and Zaoui (2024, pp. 79–81), English is also the dominant language in international communication, accounting for approximately 70% of global communication and transactions. This widespread use highlights its crucial role in sectors such as maritime transport, aviation, and international trade, where effective communication is essential for coordination, safety, and operational success.

To address these growing linguistic demands, educational institutions have

increasingly adopted English for Specific Purposes (ESP) and vocational English programmes. Unlike General English, these approaches focus on the practical language needs of learners within their specific disciplines. They aim to equip students with the vocabulary and communication skills required for their future professions, making language learning not only an academic activity but also a practical tool for improving performance in technical and professional contexts. Hutchinson and Waters (1987, p. 19) define ESP as “an approach to language teaching in which all decisions regarding content and methods are based on the learners’ learning objectives,” emphasizing that ESP is an orientation toward learners’ specific needs rather than a fixed methodology. Likewise, Susandi et al. (2026, p. 1) emphasize that ESP instruction should be aligned with learners’ academic and professional goals, making language learning relevant to the specific demands of their disciplines.

1.2 English Communication Challenges among Engineering Students

Engineering students face several communication challenges that often make it difficult for them to deal with technical content. These difficulties are not only about language itself, but also come from learning-related issues and a gap between general English classes and the kind of communication needed in industry. For many students, moving from Basic English to technical terminology and real engineering communication is not easy, and this can affect both their studies and their preparation for future work.

1.2.1 LackofOralPractice

A primary obstacle for technical students is the insufficiency of oral practice, which is often the result of systemic and pedagogical limitations. In many academic settings, the instructional time allocated to English is remarkably low (sometimes limited to just two hours per week), which is inadequate for developing speaking proficiency (Mohammad, 2026, p. 49). Moreover, traditional teacher-centered approaches frequently limit learners to passive roles, placing emphasis on abstract linguistic structures rather than spontaneous interaction (Belhouchet, 2025, p. 22). This indicates that teaching methods limit student interaction. As Richards (2008) explains, speaking competence develops through active participation in interactional situations where learners engage in real-time communication rather than memorized language forms, and the absence of an immersive environment limits students from engaging in authentic communicative situations, such as simulated professional meetings or technical discussions. Furthermore, Medjralou and Zaoui (2024, p. 88) argue that a weak foundational background from earlier educational stages often leaves students underprepared to handle complex oral tasks at the university level, resulting in a sense of isolation in the learning process, where learners study independently without sufficient social interaction.

1.2.2 FearofMakingMistakes

The psychological aspect of language learning is very important, especially the fear of making mistakes. This anxiety can prevent students from participating in class, as many of them avoid answering questions or joining discussions because they are afraid of being judged for their errors (Horwitz et al., 1986, pp. 127–129). Studies indicate that this concern is often associated with shyness and low self-confidence, and it can be expressed as stress during

activities such as oral presentations (Mohammad, 2026, p. 126). *In such cases*, students' confidence decreases when they feel insecure about their language level. When students believe that their language level is not good enough, they may stop trying to participate, which reduces their chances of improving. As a result, this fear can also hinder their independence, since they may have difficulty completing tasks that require them to communicate on their own (Abbas, 2015, p. 55).

1.2.3 Limited Technical Vocabulary

The mastery of technical terminology represents a significant cognitive challenge for engineering students. According to Nation (2001), vocabulary learning in a second language strongly relies on context, and learners often struggle when words carry specialized or discipline-specific meanings. Consequently, engineering students may confuse everyday vocabulary with its technical equivalents and rely on literal translations that fail to convey the intended technical meaning.

Abduqadir and El-Sharif (2025, pp. 353–354) argue that learners frequently rely on unverified digital translation tools, which can produce misleading or vague results because they lack the technical background needed to verify the accuracy of the output. They further explain that this problem is intensified by a shortage of domain-specific texts and specialized dictionaries.

Similarly, Mohammad (2026, p. 129) notes that this lack of specialized resources makes it difficult for students to visualize equipment or processes associated with the technical jargon they are expected to master.

1.2.4 Lack of Confidence in Speaking English

Underlying many of these difficulties is a fundamental low self-confidence, which acts as a psychological obstacle that affects both academic achievement and workplace communication. Low confidence is linked to foreign language apprehension, where learners experience fear of negative evaluation and tend to avoid oral interactions that expose their language deficiencies (Horwitz et al., 1986, p. 128). Such psychological pressure often discourages learners from speaking. Students who view their English proficiency as low often experience increased social anxiety when performing formal speaking tasks, such as presenting research or starting a conversation with strangers (Mohammad, 2026, p. 126). Low confidence is tied to the student's academic background and the level of exposure they had to vocational English in the past. Within the industrial domain, this psychological obstacle can lead to

reduced efficiency, as the anxiety associated with occupational activities (such as technical meetings or telephone conversations) may hinder a future engineer from performing their role within an international team (Belmehdi & Zaghar, 2022, p. 195).

1.3 The Gap between Theoretical Knowledge and Practical Communication

The variation between theoretical linguistic knowledge and practical communication forms a significant barrier. This knowledge–application gap is characterized by a persistent disconnect between the general English instruction provided in educational contexts and the highly specialized communicative needs of professional and industrial environments (Abduqadir & El-Sharif, 2025, p. 353). This disparity is grounded in traditional teaching frameworks that consider language as a set of rules to be “known” rather than a situational competence to be “practiced.” Such a method incorrectly presumes that language knowledge acquired in a vacuum can be seamlessly applied to complex real-world situations without requiring contextual adjustment (Mohammad, 2026, pp. 69–70).

Mohamad (2006) identifies several critical dimensions that define the nature of this gap come as follow: First, detached instruction can limit the learning process; when language is taught separately from real-world or professional contexts, it lacks the support and nuances found in real workplace situations (Mohammad, 2026, p. 79). This is further exacerbated by pedagogical misalignment. This difficulty is reinforced by poor alignment in teaching methods, where classrooms remain teacher-centered despite a theoretical shift toward communicative methods. As a result, students fail to engage in the interaction required to shift from passive learning to active communication (Mohammad, 2026, p. 49). Furthermore, a considerable competency gap exists. While students are aware of the necessary role of English in their future careers, they may encounter difficulty achieving the level of skill required for safe and efficient operation in technical domains (Mohammad, 2026, p. 50). This issue can be seen in vocabulary differences, where the language used in books does not match the practical, job-related terms used in workshops and factories (Mohammad, 2026, pp. 129–130). In addition, academic training is insufficient in ensuring the transfer of skills, leaving students unprepared for high-pressure professional tasks such as presenting technical presentations or engaging in professional discussions (Mohammad, 2026, p. 19).

Although technology is widely regarded as a solution, it may inadvertently hinder progress by fostering dependence on automated tools as shortcuts. Depending too heavily on such tools can limit the deep thinking needed to build real skills (Mohammad, 2026, pp. 160–161). In order to close this gap, educational models must prioritize “situated learning,” placing

the student within simulated professional contexts that mirror the target industry. By implementing real communicative demands into the curriculum, teachers can help students move beyond a purely theoretical understanding toward developing an occupational identity and the linguistic preparedness essential for the workplace (ibid., p. 31). This gap is important in the Algerian university context because many students study technical subjects in different languages and they don't really get many chances to use English in real life. At the University of Relizane, Textile Engineering students have to use what they learn in class in real situations, especially during internships and later in their working life.

1.4 English Communication and Professional Readiness

The link between communicative ability and career readiness is a central component of modern vocational education. In a globalized work environment, the ability to effectively convey ideas in English is no longer considered as an independent academic skill, but rather as an essential component of a student's overall readiness for the labor market.

1.4.1 Definition of Professional Readiness

Professional readiness, frequently termed career or work readiness, is fundamentally defined as the state of being fully prepared to execute specific roles within a chosen industry. According to the National Association of Colleges and Employers (NACE, 2021), "Career readiness is a foundation from which to demonstrate requisite core competencies that broadly prepare the college educated for success in the workplace." Readiness here refers to being prepared for real workplace demands.

Within the scope of vocational and technical education, this readiness is not simply assessed by the acquisition of theoretical knowledge. Instead, it is measured by the learner's ability to appropriately use that knowledge in real-world professional situations (Mohammad, 2026, p. 19).

❖ **Linguistic and Technical Competency:** It involves being "adequately prepared" for a specific field. This requires mastering technical terminology, understanding communication patterns, and developing technical skills essential for performing tasks within the target industry (Abduqadir & El-Sharif, 2025, p. 357). It is centered on the language (grammar, lexis, register), skills, discourse, and genre relevant to these activities (Dudley-Evans & St John, 1998, p. 4).

❖ **The Developmental progression perspective:** views readiness as a continuous process of development. It represents the progressive shift of a student from a "novice student," who understands concepts in a largely theoretical or abstract manner, to an "effective practitioner" capable of practical performance in real professional settings (Mohammad, 2026, p. 86). This transition highlights that competence is not only about language acquisition; it is also about the ability to accomplish tasks and roles to the expected standard in real-life contexts (Eraut & du Boulay, 2000), emphasizing the movement from conceptual understanding to effective workplace practice.

❖ **Identity Transformation:** A crucial, yet often ignored, aspect of readiness is the cognitive change in a student's self-awareness. This "identity transformation" allows the learner to develop a sense of integration and professional authority within a specific learning community, where learning is not merely the acquisition of skills and knowledge but a continuous process of development. In this sense, learners gradually reshape who they are through participation in social interactions that give meaning to their development and professional growth (Wenger, 1998, p. 215).

❖ **A requirement for employment:** In the context of global corporations and international sectors, professional readiness is regarded as a fundamental condition for employment. It serves as the link that allows for a competitive access into the employment sector (Belmehdi & Zaghar, 2022, p. 197), where work readiness refers to the degree to which graduates possess the necessary skills and competencies to succeed in professional environments and ensure a successful transition into employment (Caballero & Walker, 2010; Fenech et al., 2020, p. 86).

❖ **Operational Readiness:** Especially in high-risk technical fields such as the oil and gas industry, readiness is defined by the ability to meet strict communication and safety requirements, ensuring that safety protocols are followed and work efficiency is maintained (Mohammad, 2026, p. 33). Research shows that high-risk industries such as oil and gas are exposed to workplace environment risks, where inadequate communication and human mistakes significantly contribute to accidents and safety failures. Thus, effective communication and strict compliance to safety systems are necessary for maintaining safe and efficient operations (Zara et al., 2023, pp. 1–2).

In summary, professional readiness represents the coordination between a learner's developed skills and the actual, changing requirements of the workplace. It is the driving force that enables a successful transition from the structured academic environment to active, independent participation in professional life.

1.4.2 The Role of Communication Skills in Professional Settings

Efficient communication is the essential mechanism through which professionals express ideas, share reviews, and achieve mutual understanding in the workplace. In today's international industries, English has become the primary medium for allowing communication among multinational teams, ensuring that technical knowledge is shared accurately across various linguistic and cultural boundaries. In this context, English is used as a common working language among professionals from different linguistic backgrounds to facilitate global interaction and organizational cooperation (Kankaanranta & Louhiala-Salminen, 2013, p. 19).

Beyond being an academic requirement, proficiency in English communication is a basis of workplace efficiency and a key factor in maintaining safety, particularly in high-risk industries such as engineering, aviation, and energy (Messaoudi, 2025, p. 14).

The significance of these skills is demonstrated across different key professional dimensions:

❖ **Safety and Risk Management:** In high-risk industrial environments, accurate English communication is an essential safety tool. It is vital for avoiding accidents and ensuring strict compliance with safety protocols. For example, in the aviation and maritime sectors, strong oral English is essential for promoting real-time data use and managing complex operations where any misunderstanding could lead to negative results (Messaoudi, 2025, p. 14). Ineffective communication is a major contributing factor to workplace accidents in high-risk industries, where safety communication plays a crucial role in preventing injuries, fatalities, and operational failures (Zara et al., 2023, p. 2).

❖ **Operational Execution and Efficiency:** Professional success relies heavily on both oral and written competencies. Oral skills enable engineers to participate effectively in technical briefings, project meetings, and collaborative problem-solving. Simultaneously, written proficiency is indispensable for producing accurate technical reports, operation manuals, and professional correspondence, which are standard requirements in modern engineering and business contexts (Mohammad, 2026, p. 23). Effective communication is considered an integral element of professional competence in global business environments (Kankaanranta & Louhiala-Salminen, 2013, p. 17).

❖ **Business Success and International Reputation:** Mastering English fosters trust and confidence among international clients. It facilitates business operations across national borders, improving a company's professional image and its capacity to negotiate and secure contracts with foreign colleagues (Belmehdi & Zaghar, 2022, pp. 209–210).

Information Exchange and Professional Progression: As the global language of research and innovation, English is essential for the dissemination of technical knowledge (Kimouche et al., 2025, p. 183). Proficiency allows professionals to remain updated with the latest technological advancements, participate in international conferences, and contribute to the global scientific community (Talha & Benhattab, 2022, p. 464).

❖ **Career advancement:** Within the modern labor market, English proficiency is often a prerequisite for recruitment in multinational corporations. It is frequently viewed as a "necessary condition" for fulfilling professional roles. As a result, competence in English communication contributes to career development and the acquisition of leadership positions in the global economy (Belmehdi & Zaghar, 2022, p. 197).

In summary, communication skills act as a bridge between a student's theoretical expertise and their practical performance in the workplace. Such abilities shape a professional's capacity to work safely, communicate effectively with colleagues and clients, and progress steadily in their career path. This importance is equally visible in Algerian universities such as the University of Relizane, where Textile Engineering students need effective English communication for internships, industrial environments, and future employment chances.

1.4.3 English Communication Needs in Industrial and Technical Contexts

English is the primary language in the industrial world; it allows engineers and experts to exchange information accurately, regardless of their native languages. In sectors like oil and manufacturing, good communication is not just a skill but an indispensable requirement for the job. Clarity in speech protects workers and ensures error-free operations.

The best example of this is aviation, where English serves as the global standard for aircraft navigation. In the air, communication must be crystal clear and unambiguous, as any misunderstanding could lead to serious disasters (Messaoudi, 2025, p. 14).

Communication needs in technical fields are expressed through several important points, which are:

➤ **Oral Communication and Interaction:**

The ability to speak is necessary for success at work. Workers must be able to explain safety instructions in a simple way, as this is what prevents accidents.

And it stands alone; communication skills are also essential for managing technical meetings, presenting projects, and discussing with international clients. These situations need strong and precise languages so that they can reach clear agreements and achieve the company's objectives efficiently (Belmehdi & Zaghar, 2022, p. 210).

➤ **Written Documentation and Correspondence:**

In technical work, it is essential for employees to know how to write work documents correctly. This includes writing daily reports, equipment manuals, and official documents.

In some large factories, writing becomes even more important because employees need to record types of hazards, lifting plans, and machine specifications. Furthermore, English is used daily for writing emails and correspondence with companies and partners in other countries (Mohammad, 2026, pp. 23–24).

➤ **Technical Vocabulary and Precision:**

Mastering the specific terminology of the profession is vital, as it ensures clarity in during operations. Accuracy in using these technical terms is essential for correctly understanding operational procedures and relevant textbooks.

Without this appropriate terminology, the risk of errors in understanding equipment operation or technical specifications increases, potentially leading to significant operational problems (Abduqadir & El Sharif, 2025, p. 354).

➤ **Professional Alignment and Corporate Image:**

English is the bridge connecting company headquarters with their branches abroad and global markets. Building customer trust and maintaining a professional image requires clear and effective communication. This is why students need practical training that reflects real workplace conditions and meets actual job requirements (Belmehdi & Zaghar, 2022, p. 209).

In conclusion, this means that curricula should not only focus on general language skills but also emphasize the competencies required in industrial and modern work environments.

Therefore, Algerian technical universities should connect classroom instructions with the practical skills that students will use at work place.

1.5 Blended Learning: Concepts and Models

With the growth of technology, new teaching methods have appeared to help students learn better. One of the most important methods is Blended Learning, which is simply a mix of traditional classroom learning and online learning. This approach has broken the traditional classroom boundaries and made learning more fun and easy.

1.5.1 Definition of Blended Learning

Blended learning is broadly understood as an “umbrella term” that encompasses any educational format combining traditional in-class instruction with online learning experiences (Boumaraf, 2025, p. 107). Graham (2006, p. 5) gives a similar description, presenting it as a mix of face-to-face teaching and computer-based instruction. In simple terms, it is not only about introducing technology into lessons. The key idea is how different methods are actually combined to support learning. Blended learning helps make learning more flexible and more focused on students’ needs (Kadri & Hamada, 2016, pp. 173–174). This is because teachers can adjust their teaching approach according to the needs of both the lesson and the learners. At times, classroom interaction becomes more important, while in other situations online tasks may be more effective depending on the lesson content. Graham (2006, pp. 4–5) also highlights that this combination allows teachers to benefit from both traditional and online learning environments.

Researchers also provided different perspectives on its definition:

- ❖ **Integrated Instructional Model:** It is viewed as an educational approach that combines face-to-face elements with self-directed digital learning. This integration creates a flexible environment where both settings work together to support students’ learning (Mohammad, 2026, p. 20).
- ❖ **Formal Program with Learner Control :** From a structural standpoint, blended learning is a formal program where students conduct at least part of their learning online. Crucially, this model provides learners with a degree of control over the time, place, path, and pace of their study, moving away from a “one-size-fits-all” instruction (Al-Harbi, 2022, p. 678).
- ❖ **Hybrid Curricular Design:** Is often described as a model where traditional pedagogical methods coexist with modern electronic resources. In this design, online

activities are not separated from the course but integrated into a single coherent learning experience (Al-Harbi, 2022, p. 678).

- ❖ **Technological and procedural perspective:** Blended learning also involves the use of multimedia tools, networks, and online platforms to combine learning objectives with different delivery methods. This approach makes use of interaction in face-to-face teaching while also benefiting from the flexibility of digital tools. In this way, some limitations of the traditional classroom can be reduced (Djokhdem, 2025, p. 26).
- ❖ **Quantitative Classification:** A course is usually considered blended or hybrid when part of its content (around 30% to 79%) is delivered online, while the rest takes place in face-to-face sessions (Nusong & Watanapokakul, 2025, p. 323). This percentage is not fixed and may vary depending on the course structure.
- ❖ **Vocational Bridge:** In technical and professional contexts, Blended learning allows students to engage in communication activities that encourage realistic workplace situations, which helps them prepare for the communication requirements needed in their future professions (Mohammad, 2026, p. 86).

Overall, this approach represents a shift in teaching and learning by encouraging more active and student-centered learning, where technology supports interaction and professional preparation, instead of relying only on lecture-based instruction.

1.5.2 Face-to-Face Learning (F2F)

Face-to-face learning refers to the traditional teaching method, where the teacher explains lessons to students directly in physical classroom (Qasim, 2025).

The most important characteristic of this type of learning is the immediate and direct communication between the teacher and the student at the same moment (Nusong & Watanapokakul, 2025). Despite digital advancements, this human encounter remains essential because it provides support and guidance that screens alone may not offer (Bakir, 2023, p. 431). Ultimately, as humans, we learn best through interaction and collaboration with others (Vygotsky, 1978, p. 90).

In a blended learning system, the traditional classroom plays several important roles:

- ❖ **Developing interpersonal and communication skills:** The classroom is the ideal place to learn how to communicate confidently with others, skills essential for success in any future career (Mohammad, 2026, pp. 114--115). This is because learners are constantly exposed to real interactional situations where they must express ideas, respond to others, and negotiate

meaning. Such continuous exposure helps them gradually reduce hesitation and develop natural communicative competence.

❖ **Getting immediate clarification:** One of the greatest advantages of the classroom is the ability to receive a quick response; the teacher can simplify complex ideas and correct students' linguistic errors as soon as they occur (Mohammad, 2026, p. 162). This immediate feedback helps learners avoid fossilization of errors and allows them to understand difficult concepts in real time, which makes the learning process more efficient and accurate.

❖ **Understanding body language:** Direct learning allows us to see facial expressions and body movements, which are essential cues for deep understanding and are difficult to convey entirely online (Mohammad, 2026, p. 113). These non-verbal signals play an important role in communication because they help learners interpret meaning, detect emotions, and better understand the teacher's intentions, which strengthens overall comprehension.

❖ **Collaborating with peers:** Group discussions encourage building a "learning community" that trains students to work as a team, just as happens in professional work environments (Mohammad, 2026, p. 158). Through collaboration, learners exchange ideas, support each other, and develop problem-solving skills, which are essential in both academic and professional contexts where teamwork is required.

❖ **Focusing on practical application:** In many curricula, the lesson becomes a practical learning space; instead of simply hearing information, students begin to apply what they have learned in activities that simulate real-life situations (Mohammad, 2026, p. 29). This application-based learning helps students connect theory with practice, making knowledge more meaningful and easier to retain, especially in vocational and technical fields.

❖ **Psychological support and encouragement:** Having the teacher and peers in the same place helps students overcome anxiety and build the self-confidence to participate in discussions (Mohammad, 2026, p. 114). The classroom environment creates a sense of safety and support, which reduces fear of making mistakes and encourages students to speak more freely, gradually improving their confidence in using the language. However, this type of traditional education has some challenges:

It is tied to fixed times and locations that cannot be changed, and the limited class time may not give students enough opportunity for deep thinking or intensive practice (Kadri & Hamada, 2016, p. 172). Furthermore, traditional teaching tends to present the same content to everyone in the same way, which may not suit the varying abilities and learning paces of students (Bouguebs, 2020, p. 1).

For this reason, “blended learning” intelligently combines face-to-face instruction with e-learning to overcome these obstacles and offer a more flexible learning experience (Qasim, 2025).

1.5.3 Online Learning

Online learning is simply defined as the use of the internet to deliver lessons and educational materials, thus saving students the trouble of physically attending school or university (Samawi, 2021, p. 146). The most important characteristic of this type of education is "freedom," as students have the ability to determine the time, place, and pace that suits them best (Boumaraf, 2025, p. 107). As high-speed internet and smartphones became more widespread, the barriers to reaching information largely vanished, allowing learners to engage with their studies at any time and from any location (Mohammad, 2026, p. 22).

In practical terms, online learning is mainly delivered through digital platforms such as Blackboard or Moodle. These systems act as a virtual campus where lessons are organized, exams are administered, and interactive forums allow for ongoing engagement between faculty and learners (Mohammed, 2026, pp. 21-22). In this digital world, we find two types of education:

- ❖ **Synchronous Learning:** This is direct (online) interaction at the same time.
- ❖ **Asynchronous Learning:** It functions by letting students tackle their coursework independently, without the need for a fixed schedule (Al-Harbi, 2022, p. 678). This flexibility is invaluable in demanding fields like engineering, where the sheer density of the material often requires a slower, more deliberate pace. By stepping away from the fast-moving environment of a physical classroom, learners can process intricate technical details and reflect on the content with much greater depth (Bouguebs, 2020, p. 3).

The Role of Online Learning in the Blended Learning System:

The online learning component often represents the preparation phase, where students study technical terms and basic concepts through interactive computer activities (Mohammad, 2026, p. 28). The advantage of these activities is that they provide students with immediate feedback and automatically correct their mistakes, thus building a strong foundation before the actual class (Mohammed, 2026, p. 116).

This aligns with Moore's perspective, who believes that distance learning is not merely a matter of physical distance, but rather an educational method that aims to organize the relationship between teacher and student despite geographical separation (Moore, 1997, p. 22).

However, despite these advantages, students face several difficulties, the most significant of which are technical problems such as internet outages or device malfunctions. This digital freedom also requires a significant degree of commitment and time management from the student. Finally, the student may sometimes feel isolated or lonely due to the absence of classmates and direct social interaction found in the traditional classroom (Mohammed, 2026, p. 147).

1.5.4 Blended Learning Models

The implementation of blended learning is not a single, standardized process, but rather takes shape through a range of different models. Each model offers a specific balance between in-person instruction and independent digital learning (Nusong & Watanapokakul, 2025, p. 324). These models help educational institutions design learning experiences that align with curriculum needs and students' professional goals (Djokhdem, 2025, p. 41).

1.5.4.1 The Rotational Model

The rotational model is a structured framework in which students move between different learning methods according to a set schedule or under the guidance of an instructor. These methods must include at least one online learning component (Zerawlia & Arar, 2022, p. 1677). This model is particularly effective in vocational training, as it combines digital self-learning with direct classroom interaction, achieving a good balance between various educational activities (Mohammad, 2026, p. 46). Blended learning literature also indicates that this model is based on the organized transition of students between several learning modes, such as online learning, small group work, and face-to-face instruction, according to a set schedule or under the guidance of an instructor (Watson et al., 2015, p. 6).

The rotational model is divided into several main types, each differing in its degree of flexibility and method of organizing learning. These include station rotation, laboratory rotation, and individual rotation:

❖ **Station rotation:** Students move between different stations within the same section. One station might involve digital activities using computers, while other stations focus on group work or teacher-led learning.

❖ **Lab rotation:** Learners move between different learning spaces, such as from a regular classroom to a computer lab dedicated to the electronic component of the lesson.

❖ **Individualized rotation:** This is the most flexible approach. The teacher creates an individualized plan for each student, allowing them to skip some stations or adjust their learning path according to their level and abilities.

1.5.4.2 The Flex Model

The flex model prioritizes digital learning, where educational content is primarily delivered online (Zerawlia & Arar, 2022, p. 1678). However, learning remains connected to the traditional educational environment within the institution. In this context, the teacher's role shifts from being the primary source of information to being a facilitator and guide. Support and guidance are provided as needed through individual sessions or small groupwork (Qasim, 2025).

This model encourages learner autonomy, allowing them to progress at a flexible pace that aligns with their needs and learning speed (Al-Harhi & Al-Salamalat, 2024, p. 222). In the blended learning literature, the flex model is described as a system where online learning is the primary method of content delivery, while learning generally takes place within a traditional educational environment, with students able to progress according to their individual needs. Teachers also remain directly available to provide support, open discussions, and promote learning activities, although the nature of their role may vary depending on the program design (Watson et al., 2015, p. 7).

1.5.4.3 The Flipped Classroom Model

The flipped classroom model, as a specific form of the rotational model, reorganizes the relationship between classroom learning time and independent study outside of class (Zerawlia & Arar, 2022, p. 1678). Theoretical content and lectures are transferred to the digital space via videos or pre-recorded materials, while class time is dedicated to interactive activities such as discussion, problem-solving, and fostering interaction among students (Zerawlia & Arar, 2022, p. 1687).

In the context of teaching English for technical purposes, this model is typically implemented within a three-stage learning sequence (Mohammad, 2026, pp. 28–29):

1. Introduction: A digital stage aimed at preparing learners and understanding the overall context of the lesson.
2. Input: An online stage focused on learning specialized vocabulary and grammar.
3. Output: An interactive, classroom-based stage aimed at language production and receiving immediate feedback.

This model is considered effective in vocational training because it allows for better use of class time and promotes knowledge building through direct interaction and practical application.

1.5.4.4 The Self-Blended Model (ALa Carte)

This model, also known as the (ALa Carte) model, allows students to study one or more courses entirely online, alongside their traditional studies within the educational institution (Zerawlia & Arar, 2022, p. 1678). This model is highly individualized, as learners choose online courses that align with their interests or academic needs (Al-Harhi & Al-Salamalat, 2024, p. 222). While students continue to attend most of their courses in person at the university, this type of learning gives them greater freedom in organizing their learning and places primary responsibility on them for acquiring knowledge in certain specific subjects (Zerawlia & Arar, 2022, p. 1678).

In the literature on blended learning, this model is defined as a course delivered entirely online alongside in-person instruction at a traditional educational institution. It is supervised by an online instructor and is considered an optional, rather than a core, full-time program (Watson et al., 2015, p. 7).

1.5.4.5 The Enriched Virtual Model

The enriched virtual model is a form of blended learning where the educational process is distributed between the physical campus and a remote virtual environment (Zerawlia & Arar, 2022, p. 1678). Unlike the flipped classroom model, which requires near-daily attendance, this model relies more heavily on online learning, with only limited and periodic in-person sessions.

In this context, students may come to the university once or twice a week for direct support or to complete some practical activities. This model offers learning flexibility while maintaining a partial connection to traditional classroom instruction (Al-Harhi & Al-Salamalat, 2024, p. 222).

In the literature on blended learning, the augmented virtual model is described as a course in which students are required to attend live sessions with a recorded instructor, while most of the learning and assignments are completed remotely. These in-person sessions are mandatory but less frequent than traditional classes. This model differs from fully online learning because direct interaction with the instructor is an essential part of the educational process, not merely supplementary support (Watson et al., 2015, p. 7).

1.6 Blended Learning in Language Teaching:

Technology has dramatically changed the way we teach and learn, giving rise to a new generation of learners we call the "Internet Generation" (Kadri & Hamada, 2016, p. 171). In the field of language teaching in particular, technology is no longer just an aid, but a real force that is transforming education; it is redefining the roles of the teacher and the student and creating a flexible learning environment that transcends the boundaries of school walls.

1.6.1 Technology in Language Learning

Today, language teaching relies on different digital platforms and tools to facilitate the learning process. Learning Management Systems (LMS), such as Moodle and Google Classroom, serve as the foundation for hybrid courses (Zerawlia & Arar, 2022, p. 1679). These systems allow students to engage with course materials well beyond classroom sessions (Mohammad, 2026, p. 21). Also, communication through apps such as WhatsApp, Facebook, and Zoom helps build active learning communities. Digital media involving podcasts and instructional videos also plays a role in improving listening and pronunciation skills (Abduqader & El-Sharif, 2025, p. 356).

The increase of Artificial Intelligence has introduced new possibilities. Tools like ChatGPT and Grammarly provide immediate feedback on writing, while voice recognition technology offers a personalized way for students to work on their accents (Nosong & Watanapokakul, 2025, p. 346). For technical majors, Virtual Reality is valuable as it simulates

real-world professional scenarios (Mohammad, 2026, p. 138). Overall, these tools promote learner independence by giving students more control over their study space, turning traditional lessons into more interactive experiences.

But implementing technology comes with certain challenges. Technical glitches and unstable internet connections can prevent progress. There is also a concern that dependence on AI might limit deep language interaction. In conclusion, both teachers and students require ongoing training to build the digital literacy skills needed (Mohammad, 2026, p. 136).

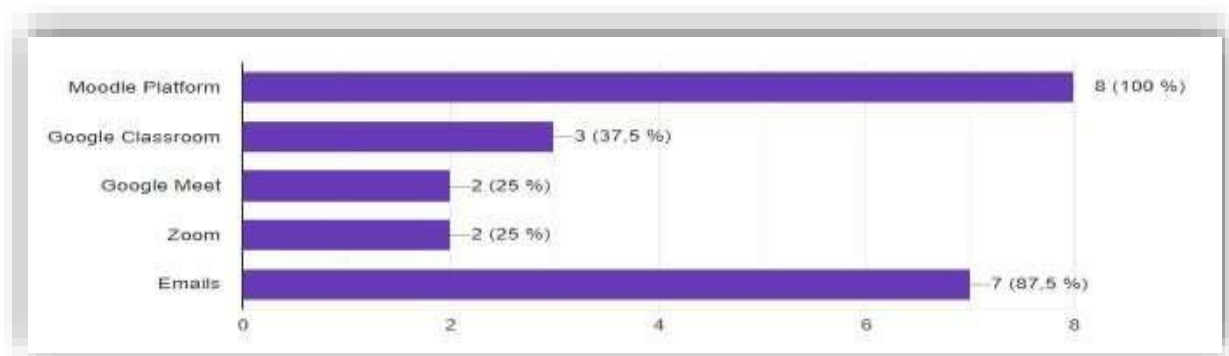


Figure 1.5: Teachers' Usage Rate of ICT Tools of Interaction based on a Survey of 8 Participants (Zeraoulia & Arar, 2022, p. 1679).

1.6.2 Online Learning Platforms and Tools

Blended learning utilizes a diverse array of digital platforms and tools to create dynamic, flexible, and adaptable learning environments that effectively extend traditional classroom boundaries (Mohammad, 2026, p. 20). These technologies are not merely supplementary; they serve various pedagogical functions ranging from formal content management and assessment to informal social interaction and immersive skill simulation. By integrating these tools, educators can establish a cohesive learning ecosystem that supports both independent, self-paced study and collaborative, socially constructed knowledge (Djokhdem, 2025, p. 33).

The main structure of blended learning is based on centralized Learning Management Systems (LMS) such as Moodle, Google Classroom, Blackboard, and Canvas. These platforms serve as the core framework for hosting instructional content and tracking student progress. For instance, Moodle is widely recognized for facilitating e-learning activities through dedicated messaging systems and forums, while Google Classroom enables the efficient distribution of materials and real-time teacher-student interaction. Similarly, platforms like Blackboard are frequently employed to introduce complex language functions and technical vocabulary through interactive, machine-checkable exercises that provide learners with immediate feedback (Al-Badri et al., 2021, pp. 20-21).

Beyond formal management systems, communication and social networking tools play a vital role in fostering collaborative learning and strengthening social ties within the academic community. Messaging applications like WhatsApp are increasingly used for mobile-mediated assessment and informal study groups, allowing for the rapid exchange of feedback on assignments (Mohammad, 2026, p. 134). Facebook is also recognized for its ability to support information sharing and self-expression through dedicated groups (Kadri & Hamada, 2016, p. 183).

For synchronous interaction, tools such as Zoom, Microsoft Teams, and Google Meet provide essential spaces for virtual lectures, real-time debates, and immediate pedagogical guidance, bridging the physical gap between participants (Bara, 2022, p. 95). Furthermore, specialized language learning applications and multimedia technologies enhance the development of specific linguistic competencies (Medjralou & Zaoui, 2024, p. 83). Writing assistants like Grammarly and AI-driven tools offer immediate grammatical support, while applications such as Quizlet and Duolingo assist in vocabulary acquisition and pronunciation (Mohammad, 2026, p. 140). To boost motivation, gamification tools like Kahoot and Socrative introduce interactive competition into the assessment process (Mohammad, 2026, p. 142).

In technical education, the integration of immersive technologies (including Virtual Reality (VR) and 360-degree simulators) is particularly transformative. These tools bring industrial settings into the classroom, allowing students to practice procedural communication and technical tasks within safe, digital simulations of their future workplaces (Mohammad, 2026, p. 138). This multifaceted technological approach ensures that learners have access to authentic resources, from YouTube content to electronic libraries and specialized dictionaries, empowering them to clarify complex technical concepts independently (Medjralou & Zaoui, 2024, p. 83).

1.6.3 Benefits of Blended Learning for Language Skills

The integration of blended learning in language instruction offers a comprehensive suite of benefits that enhance both the linguistic and psychological dimensions of the learning process. By strategically combining the human interaction of face-to-face sessions with the flexibility of digital tools, this model provides a more robust educational experience than traditional single-modality approaches. These advantages extend across several critical areas, from the development of core competencies to the cultivation of professional readiness (Abbas, 2015, p. 38).

In terms of core linguistic skills, blended learning is particularly effective in enhancing oral communication and listening proficiency. It allows students to engage in real-world communicative tasks that mirror authentic language use, where face-to-face sessions provide essential opportunities for spontaneous dialogue and immediate feedback—elements crucial for developing fluency and accurate pronunciation (Boumaraf, 2025, p. 108). Furthermore, the model significantly improves writing proficiency by facilitating structured cycles of independent drafting via online tools, followed by teacher-led refinement in the classroom. This approach is especially beneficial for mastering professional genres such as technical reports, formal emails, and scientific papers (Kadri & Hamada, 2016, p. 178). Additionally, the acquisition of specialized technical vocabulary is streamlined through diverse digital resources, such as interactive glossaries and multimedia content, which allow for the repeated exposure and personalized pacing necessary for long-term retention (Boumaraf, 2025, p. 110).

Beyond linguistic gains, this model offers significant cognitive and pedagogical advantages. One of its primary benefits is the cultivation of learner autonomy and self-regulation; the online component empowers students to take control of the time, place, and pace of their instruction, fostering a sense of responsibility essential for lifelong professional growth (Boumaraf, 2025, p. 106). Moreover, by integrating diverse media and collaborative tasks, blended learning encourages higher-order cognitive engagement, promoting critical thinking and analytical skills as students synthesize information from various sources (Kadri & Hamada, 2016, p. 174). The inclusion of digital platforms also enables real-time, automated feedback, allowing learners to identify and rectify linguistic errors instantly, which reinforces the active construction of knowledge (Mohammad, 2026, p. 116).

From a psychological perspective, the variety of instructional methods (including gamification and interactive simulations) makes the learning process more dynamic, leading to increased student motivation and engagement (Bouguebs, 2020, pp. 8-9). Importantly, regular practice in both physical and digital settings helps students overcome social anxiety and shyness. The less intimidating nature of online interaction can serve as a bridge, allowing lower proficiency students to build the confidence needed for active classroom participation (Mohammad, 2026, pp. 114-115).

Finally, blended learning directly supports professional readiness by providing authentic workplace simulations. Through advanced tools like Immersive Virtual Reality (IVR) and collaborative peer projects, the model mirrors professional team dynamics, preparing students for the interpersonal and operational demands of multinational technical environments (Mohammad, 2026, p. 138).

1.7 Blended Learning and English Communication Development

Blended learning facilitates the development of English communication skills by strategically integrating face-to-face (F2F) interaction with digital tools, creating a synergistic relationship where each modality addresses specific linguistic and professional needs. This model effectively bridges the gap between theoretical knowledge and practical application by situating language acquisition within authentic contexts—such as industrial workshops, technical plants, or aviation control rooms. The success of this approach lies in its ability to provide a comprehensive learning environment that mirrors the complexities of the modern professional world (Mohammad, 2026, p. 123).

The development of communication skills through this integrated framework is characterized by several key mechanisms:

❖ **Oral Fluency and Confidence:** The face-to-face component remains uniquely effective for enhancing oral communication. It provides a supportive environment for spontaneous dialogue and immediate pedagogical feedback. Through structured speaking activities, such as presentations and simulations of workplace scenarios, learners can progress from hesitant speakers to confident communicators. In specialized sectors like aviation or engineering, these in-person interactions are critical for mastering standardized phraseology and developing the ability to respond effectively under high-pressure, real-time conditions (Messaoudi, 2025, p. 36).

❖ **Structured Writing Cycles:** Blended learning significantly improves professional and academic writing through a sequenced instructional process. Learners typically utilize the online modality for the initial "input" stage—practicing syntax and specialized lexis through interactive exercises. This is followed by classroom sessions where they refine their drafts through collaborative peer review and teacher-led feedback. This iterative process is particularly beneficial for mastering technical reports, formal email correspondence, and other industry-standard documents (Mohammad, 2026, pp. 28-29).

❖ **Lexical Acquisition and Contextualization:** The model supports the acquisition of technical vocabulary by providing repeated exposure and personalized pacing through digital resources like interactive glossaries and multimedia content. While online tools are excellent for introducing specialized terms, face-to-face instruction remains essential for clarifying the nuances and contextual usage of these terms. This ensures that students can apply industry-specific jargon correctly and accurately within professional discourse (Mohammad, 2026, pp. 115-117).

❖ **Peer Collaboration and Social Construction:** Peer interaction, facilitated both in the physical classroom and via digital platforms like WhatsApp or Moodle, acts as a powerful driver for skill development. These interactions create "communities of practice" where learners negotiate meaning, identify errors in each other's work, and collectively build the communication competencies required for multinational team dynamics (Mohammad, 2026, p. 71).

❖ **Technological Mediation of Skills:** Digital tools, including AI-driven writing assistants and immersive simulators, provide dynamic opportunities for independent practice. Advanced technologies, such as Immersive Virtual Reality (IVR) and 360-degree simulators, allow trainees to practice procedural communication safely within digital versions of their future workplaces. This enhances the transferability of language skills from the academic setting to real-world technical tasks (Mohammad, 2026, p. 138).

Research across various technical contexts indicates that students participating in these integrated programs demonstrate significant improvements in overall language proficiency and higher levels of professional readiness compared to those in traditional or purely online environments. Ultimately, the success of developing communication skills via blended learning depends on a deliberate pedagogical design that carefully balances the flexibility of technology with the irreplaceable human element of expert guidance.

1.8 Blended Learning and Professional Readiness in Technical Education

Blended learning serves as a critical mechanism for fostering professional readiness by effectively bridging the gap between academic instruction and professional practice. By integrating face-to-face interaction with self-directed digital learning, this model ensures that trainees are not only linguistically competent but are also "fully equipped" to meet the demanding operational requirements of their specific technical sectors. The strategic combination of these modalities transforms the learning environment into a proactive space where theoretical knowledge is continuously tested and applied (Abduqadir & El-Sharif, 2025, p. 357).

1.8.1 Supporting English Communication through Blended Learning

The support provided by the blended learning model for English communication is characterized by a synergistic approach that targets various professional competencies. This integration is manifested through several key features:

❖ **Integrated skill development:** The model uses the unique strengths of different instructional modes to develop specific workplace skills. For instance, face-to-face instruction is prioritized for enhancing high-stakes oral fluency, building confidence, and developing interpersonal skills through structured activities such as safety briefings and technical presentations. Simultaneously, the digital component allows for personalized pacing in mastering technical vocabulary and professional writing, including the drafting of formal emails and inspection reports (Mohammad, 2026, p. 114).

❖ **Situated and Authentic Learning:** A primary strength of blended learning is its ability to create authentic contexts by embedding language acquisition within realistic industry scenarios. This is achieved through the use of Immersive Virtual Reality (IVR), interactive simulators, and role-plays that replicate corporate culture and high-risk operational environments. Such immersion ensures that the language learned is directly relevant to the student's future workplace (Mohammad, 2026, p. 119).

❖ **Facilitating Identity Transformation:** Beyond linguistic proficiency, the model supports the learner's journey from a "classroom novice" to a "proficient workplace user." By interacting with both language instructors and technical experts within this framework, students undergo an "identity transformation." This process helps them develop a sense of professional belonging and competence within their specific community of practice (Mohammad, 2026, pp. 26-27).

❖ **Enhanced Skill Transfer and Operational Efficiency:** The ultimate goal of this approach is to ensure that communicative skills are transferable to the actual jobsite. Research suggests that trainees who develop their proficiency through blended models are more assertive and effective in technical environments, as they can accurately share knowledge with minimal misunderstanding. In high-risk industries like oil and gas or aviation, this clarity is essential for operational safety, as the model reinforces the precise use of specialized phraseology and safety-related discourse (Messaoudi, 2025, p. 86).

In summary, blended learning supports professional readiness by transforming English from a theoretical academic subject into a functional, indispensable tool for workplace performance. This ensures a smooth and confident transition from the vocational training environment to independent and active career participation.

1.8.2 Blended Learning in Professional Training Contexts

Blended learning is increasingly utilized in high-stakes professional training environments (such as the energy sector, aviation, and healthcare) to simulate authentic workplace demands and ensure operational safety (Messaoudi, 2025, p. 18). These specialized contexts prioritize "situated learning," a framework where knowledge acquisition is deeply embedded in the cultural and technical practices of a specific organization. By integrating digital simulations with practical training, organizations can bridge the gap between abstract theory and field-specific performance (Mohammad, 2026, p. 84).

The effectiveness of this model is clearly illustrated across several specialized industrial and professional fields:

❖ **The Oil and Gas Industry:** In advanced industrial training centers, such as those in Saudi Arabia, blended learning is a primary tool for preparing trainees for complex workshop environments. A notable application is the "Rigger III Refresher Course," which mandates the completion of eLearning modules and 360-degree interactive simulators before trainees can begin face-to-face practical sessions. Furthermore, advanced technologies like Immersive Virtual Reality (IVR) are used to "bring the plant" to the classroom. This allows trainees to practice high-risk tasks, such as flushing a sight glass on a vessel, in a safe digital environment before executing them on-site (Mohammad, 2026, p. 119).

❖ **The Aviation Sector:** In training programs for air traffic controllers (ATC), particularly in Algeria, the blended model focuses on mastering standardized ICAO phraseology and plain English for emergency situations. This includes analyzing real ATC recordings and participating in complex simulations. Research indicates that these practice-based methods are significant drivers of effective performance, providing trainees with the confidence needed to handle real-time communication under intense pressure (Messaoudi, 2025, p. 41).

❖ **Healthcare and Nursing:** Comparative studies in healthcare education, such as those conducted in nursing training in India, highlight the superiority of the "Rotation Model" among various blended formats. This model provides a balanced integration of activities and allows for the immediate pedagogical feedback necessary for achieving clinical proficiency and ensuring patient safety (Mohammad, 2026, p. 46).

❖ **Process Control Systems Training (PCST):** In technical programs like PCST, students who develop their communication skills through blended learning are observed to be more assertive and effective during their subsequent technical training. They possess a greater ability to clarify technical doubts and participate in professional dialogue, which directly enhances their performance in complex industrial process units (Mohammad, 2026, p. 127). A primary advantage of integrating these modalities in professional training is the optimization of resources. By delivering theoretical lectures and specialized technical vocabulary through self-directed online modules, trainers can dedicate physical workshop time exclusively to hands-on applications and practical activities. This strategic division ensures that when trainees arrive at technical facilities, they already possess the foundational knowledge required to operate machinery and adhere to safety protocols, thereby maximizing the value of expert-led instruction (Mohammad, 2026, p. 118).

Conclusion

In conclusion, this chapter has given an overview related to English communication in technical and professional fields and the various practices related to blended learning. Some key concepts in the use of English in engineering contexts have also been highlighted in order to show the gap between theory and practice. It has shown that English is an essential language in industry and engineering, in where it is important for safety, knowledge sharing, and professional readiness. However, what creates a gap between what they learn in theory and what is needed in real work situations is that engineering students still face numerous challenges as shown in the previous sections, , such as lack of speaking practice, fear of making mistakes, and limited technical vocabulary. To deal with these problems, blended learning has been discussed as an appropriate approach. This method brings classroom and online learning together which provides students with more flexibility in learning. It also helps them with their language skills and increases their confidence when using English in real situations. In addition, it makes learning more connected to real professional contexts, which can help students move from university to professional environments more easily.

In scientific research work, methodological approaches are also of great importance in conducting the study. In the next chapter, the investigator will present the theoretical framework related to research in education and design the methodology of this study. Furthermore, a situation analysis of English use in the Algerian educational context will be presented, with a special focus on engineering students at Relizane University.

Chapter Two

Methodology and Data Analysis

Introduction

In the previous chapter, the theoretical background related to this study was presented. This chapter, however, focuses on the practical aspect of the research. It aims to describe the main steps followed in conducting the study and to give an overview of the methodological approach adopted to investigate the role of blended learning in supporting English communication and professional readiness among textile engineering students.

The chapter begins by presenting the research design and the approach employed. It then provides an overview of the research setting as well as the participants involved in the study. Furthermore, it introduces the data collection instruments used, which are the questionnaire and classroom observation, which were selected to gather information about students' use of English and their communication in both traditional and blended learning environments.

In conclusion, the chapter discusses the processes followed in data collection and analysis. It also addresses challenges related to accuracy, consistency, and ethical considerations in order to guarantee the credibility of the research findings.

2.1 Research Design

This research was conducted at the Department of Sciences and Technology at the University of Relizane with the purpose of investigating the function of blended learning in supporting English communication and strengthening career preparedness among textile engineering students. To address the study questions and fulfill the aims of the study, a mixed-methods research design was applied, combining both quantitative and qualitative approaches.

This study follows a mixed-methods approach, combining both qualitative and quantitative methods. The researcher seeks to obtain a comprehensive understanding of students' communication difficulties, their use of English in academic and professional contexts, and their perception toward blended learning.

The qualitative part is relying on classroom observation, which offers deeper insight into students' communication, involvement, and English usage throughout classroom activities.

The study is mostly descriptive, as it focuses on showing and analyzing students' experiences and classroom practice. This link between methods helps offer a clear view of the study topic and allows for a richer interpretation of the findings.

For the purpose of examining the role of blended learning in supporting English communication and career readiness, this study was conducted at the University of Relizane, specifically in the Department of Sciences and Technology, focusing on textile engineering students.

These students study all their academic sources in English, involving specialized subjects related to their domain, in addition to an English module that helps develop their English skills. This makes the setting useful for understanding how students use English in both academic and professional environments.

This setting was selected because it provides a suitable context to explore the students' encountering issues when using English in a technical field, in addition to the role of blended learning in developing their communication skills.

2.2 Population and Sample

The population of this study consists of second-year Textile Engineering students at the University of Relizane, enrolled in the Department of Engineering. From this population, a sample of twenty-six (26) students was selected to participate in the research. The sample includes both male and female students who study their academic modules in English.

These participants were chosen because they are directly involved in a technical learning environment where English is used as the medium of instruction. This makes them appropriate for investigating the role of blended learning in supporting English communication and professional readiness.

In addition, one English teacher was indirectly involved in the classroom observation in order to provide further insights into students' interaction and participation during these sessions.

Ethical considerations were taken into account throughout the research process. Informed consent was obtained from all participants before data collection, ensuring that their participation was voluntary. Confidentiality and anonymity were also guaranteed, as participants' identities were not revealed and all collected data were used strictly for academic purposes only.

2.3 Data Collection Instruments

In order to collect relevant and reliable data for this study, the researcher used two main instruments: a questionnaire and classroom observation. The questionnaire was designed to gather quantitative data regarding students' perceptions of their communication difficulties, their classroom participation, and their attitudes toward the use of blended learning in improving English communication skills. It included both closed-ended items to allow statistical analysis and structured questions to capture students' opinions more precisely.

In addition, classroom observation was used as a qualitative instrument to provide direct insight into students' actual behavior in both traditional and blended learning environments. It focused on aspects such as oral participation, interaction with peers and teachers, and the use of English during learning activities. The combination of these two instruments allowed for data triangulation, ensuring a more comprehensive and reliable understanding of the research problem.

2.3.1 Questionnaire

A questionnaire is a research tool made up of a set of questions used to collect information from respondents about a specific topic (Creswell, 2014). It includes a series of questions or prompts designed to gather data from participants. Questionnaires are usually semi-structured and are commonly used in research to collect data that help answer research questions. They may include different types of questions such as open-ended, closed-ended, rating scales, and multiple-choice items.

Questionnaires allow researchers to collect a large amount of data in a short time from different participants. They are also cost-effective tools and can be used to explore sensitive issues that may be difficult to investigate through other methods. Overall, questionnaires are widely used instruments for collecting and analyzing data in educational research.

2.3.2 Classroom Observation

Classroom observation is a research procedure used for data collection by directly observing what occurs in the classroom, including tasks, engagement, and learner behavior. It permits the researcher to comprehend how teaching and learning take place in real time.

In research practice, observation is usually supported by an observation instrument such as a checklist or rating scale. This tool helps the researcher organize observations in a structured way using predefined categories. It may include descriptive notes or evaluation points in order to maintain consistency during the data collection process (Bailey, 1984).

In general, classroom observation is widely used in educational research because it

provides direct access to real classroom situations and helps researchers understand actual practices rather than relying only on participants' reports.

2.4 Data Collection Procedure

The data collection procedure was carried out in a systematic way in order to ensure the reliability and validity of the data obtained for this study. It started with the selection of participants followed by the administration of the research instruments.

The questionnaire was first distributed to second-year Textile Engineering students in the Department of Process Engineering at the University of Relizane. It was designed to collect data about students' English communication difficulties, their use of English in academic and professional contexts, and their perceptions regarding blended learning and professional readiness.

It is a semi-structured questionnaire that includes both closed-ended and open-ended questions. It begins with a brief introduction explaining the purpose of the study. The questionnaire is divided into six sections containing 15 questions in total.

The first section focuses on personal information. The second section explores students' English learning background. The third section investigates communication difficulties in English. The fourth section examines English use in classroom interaction and professional training. The fifth section focuses on blended learning tools and students' attitudes toward online learning. The final section includes open-ended questions that allow students to express their opinions and experiences freely.

To avoid any kind of misinterpretation of the questions addressed and enable the informants to answer as clearly as possible, it should be noted that the investigator submitted the questionnaire written in two languages English and Arabic; the first observation that was highlighted is that the majority of the students responded in Arabic, except ten (10) of them who were able to answer in English.

The full version of the questionnaire is provided in the appendices section (Appendix A).

After that, classroom observation was conducted over three sessions during English sessions with second-year Textile Engineering students at the University of Relizane, Department of Process Engineering. It covered students' participation, interaction, use of English, and engagement in both traditional classroom activities and blended learning environments.

The observation was overt, as both the teacher and students were aware that observation was taking place. A structured checklist and observation notes were used to record key aspects such as classroom interaction, communication behavior, participation level, and the use of blended learning tools like Telegram and online materials.

The observation focused on teacher-student interaction, student-student interaction, classroom participation, communication difficulties, and students' responses to blended learning activities.

Classroom observation was used as a secondary data collection instrument in this research alongside the questionnaire. It aims to gather direct and authentic information about how students use English in real classroom situations and during blended learning activities. It also seeks to identify communication difficulties faced by students and to examine their level of participation and interaction.

Moreover, classroom observation helps to support and validate the findings obtained from the questionnaire by providing a clearer understanding of students' actual classroom behavior and communication practices.

The classroom observation checklist employed during the data collection process is provided in the appendices section (Appendix B).

2.5 Data Analysis Methods

This section is dedicated to the systematic presentation and examination of the data collected through the research instruments. The primary objective is to transform collected data into meaningful insights that answer the research questions regarding the effectiveness of blended learning in overcoming communication barriers for Textile Engineering students.

To ensure accuracy, reliability, and Research validity, the following analytical framework was adopted:

❖ **Quantitative Analysis:** The data obtained from the closed-ended questions in the questionnaire were processed and analyzed using the Statistical Package for the Social Sciences (SPSS). This software was used to generate descriptive statistics, such as frequencies and percentages to identify students' communication difficulties, linguistic usage, and views toward blended learning.

❖ **Qualitative Analysis:** Replies from the open-ended questions and the structured field notes from the classroom observations were examined using coding process. This facilitated the researcher to identify recurring themes, such as "Language Anxiety," "Vocabulary Gaps," and "Self-directed Learning," providing more detailed context to the statistical data.

❖ **Triangulation:** By linking the quantitative findings from SPSS with the qualitative classroom observation findings (including sessions via Zoom and Telegram), the study achieves an overall view of the students' learning experience in both physical and online environments.

2.6 Presentation and Analysis of Results

The following subsections detail the results starting with the student questionnaire analysis, followed by the classroom observation analysis.

2.6.1 Questionnaire Analysis

This section presents the findings from the students' questionnaire, which was administered to investigate the communication difficulties faced by Textile Engineering students and their attitudes toward blended learning.

2.6.1.1 Demographic Information

The first section sought to establish the profile of the participants. As shown in Table 01, the majority of respondents are female, reflecting the typical enrollment in this specific engineering branch. Crucially, 100% of the participants confirmed they had undergone professional training at the Tayal Company, which provides a solid ground for evaluating the practical side of their English use.

Table 2.1: Profile of Participants.

Variable	Category	Frequency (N=26)	Percentage (%)
Gender	Male	4	15.38%
	Female	22	84.62%
Training at Tayal	Yes	26	100%
	No	0	0%

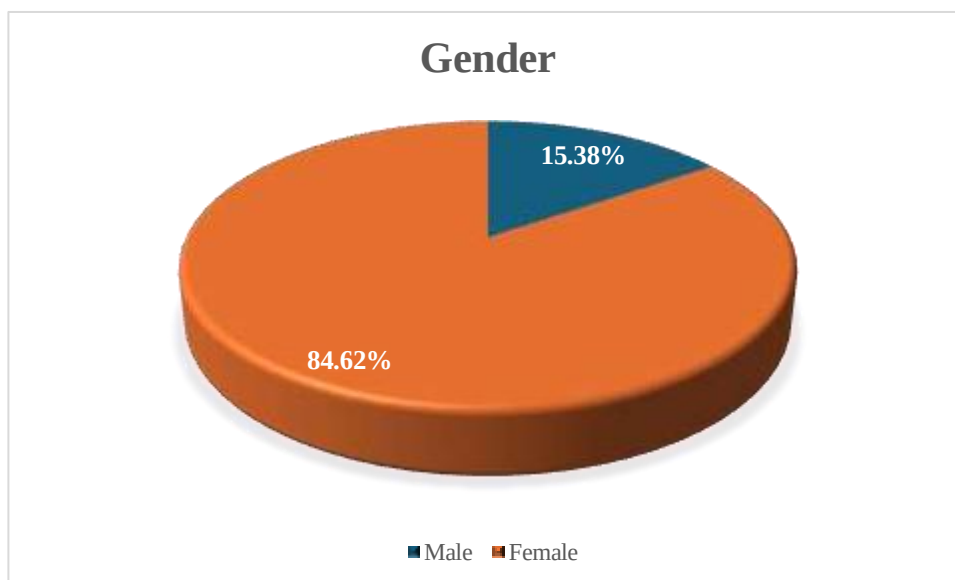


Figure 2.1: Profile of Participants.

2.6.1.2 English Language Background

This section evaluates the students' self-perception of their language proficiency. Data in Table 02 indicates that a significant portion of students perceive their level as "Weak" or "Average". While the majority fall into these lower proficiency categories, a small group of respondents identifies as having a "Good" or "Very Good" level, which suggests a varied baseline within the same class.

Table 2.2: Students' Self-Assessment of English Proficiency.

Level	Frequency (N=26)	Percentage (%)
Very Weak	4	15.38%
Weak	10	38.46%
Average	8	30.77%
Good	3	11.54%
Very Good	1	3.85%



Figure 2.2: Students' Self-Assessment of English Proficiency.

The analysis also reveals that while Arabic remains the primary language for daily communication, technical studies often involve a functional mix of Arabic and English. This linguistic environment highlights the importance of the blended learning approach, as it provides the necessary digital and practical tools to bridge the gap between the students' current proficiency and the technical demands of the textile industry.

2.6.1.3 Communication Difficulties

The core of the investigation was to identify where students struggle most. As illustrated in the results, over 90% of students admit to facing English communication hurdles.

Table 2.3: Specific Communication Situations and Difficulties.

Situation	Frequency of "Yes"	Percentage (%)
Speaking in class	18	69.23%
Understanding engineers' instructions	22	84.61%
Communicating during training at Tayal	16	61.54%

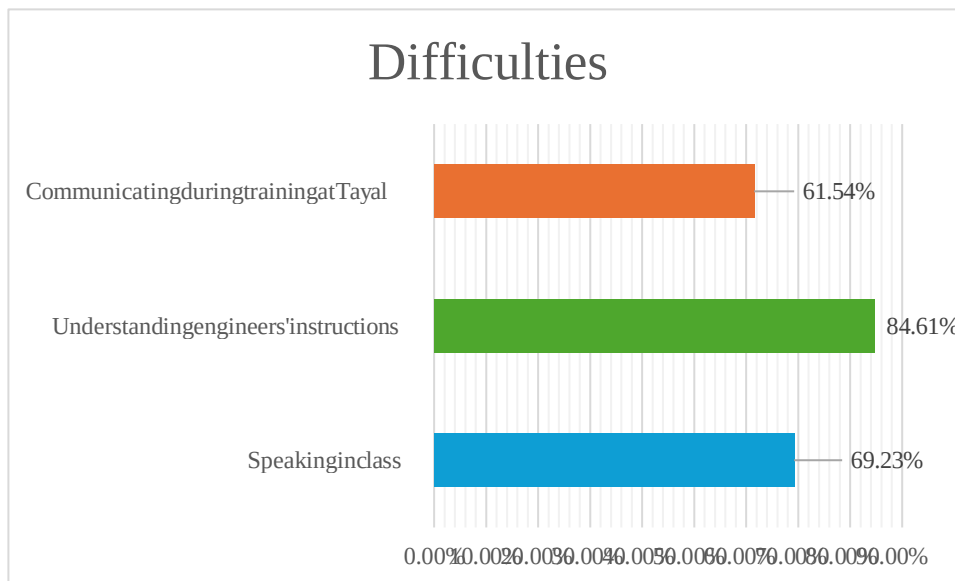


Figure 2.3: Specific Communication Situations and Difficulties.

Students noted that "new technical words" and "pronunciation" are the primary barriers when interacting with engineers at the factory.

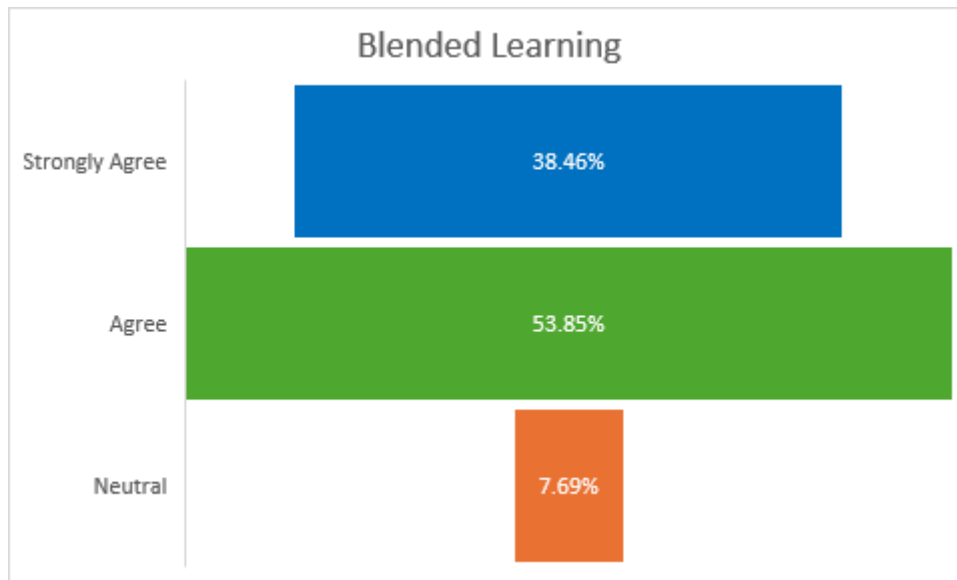
2.6.1.4 Blended Learning and Online Support

This section examines the impact of integrating digital tools. All students confirmed receiving materials via Telegram.

- ❖ **Effectiveness of Materials:** 60% of respondents believe online materials helped them "Sometimes" to better understand technical content, while 40% stated "Yes".
- ❖ **Professional Life Preparation:** There is a strong consensus that combining classroom learning with online support and factory training significantly prepares them for their future careers.

Table 2.4: Students' Attitude towards Blended Learning.

Attitude	Frequency	Percentage(%)
Strongly Agree	10	38.46%
Agree	14	53.85%
Neutral	2	7.69%

**Figure 2.4:** Students' Attitude towards Blended Learning.

2.6.1.5 Discussion of Open-Ended Responses

The qualitative data from the open-ended questions provided deeper insights into the students' strategies:

- **Vocabulary Gaps:** Many students rely on Google Translate to bridge the gap between Arabic and English technical terms.
- **Autonomous Learning:** Students expressed that online tools (YouTube, Telegram) allow them to "repeat lessons" and "watch videos" to improve their listening and pronunciation skills at their own pace.
- **The Challenge of Fluency:** A common theme was "understanding but not being able to speak," emphasizing the need for more interactive speaking practice within the blended learning framework.

2.6.1.6 Correlation Between Proficiency and Communication Barriers

To gain a deeper understanding of the challenges, a cross-analysis was conducted between the students' self-assessed English level and the specific situations where they face difficulties. As shown in Table 05, there is a clear correlation: students who rated themselves as "Weak" or "Very Weak" represent the majority of those struggling to understand engineers' instructions during their training. Conversely, students with higher proficiency (Good/Very Good) show a greater ability to grasp technical instructions, although some still face challenges with specific technical terminology.

Table 2.5: Correlation between English Level and Technical Understanding.

Student's Self-Level	Frequency (N=26)	Difficulty Understanding Instructions	Percentage (%)
Very Weak	4	4	100%
Weak	10	9	90%
Average	8	5	62.5%
Good	3	1	33.3%
Very Good	1	0	0

This data suggests that the lack of basic linguistic foundations directly hinders the acquisition of technical knowledge in a professional setting like Tayal. The high percentage of difficulty among the "Very Weak" and "Weak" groups confirms that language proficiency is a prerequisite for effective professional communication and technical understanding in the textile industry.

2.6.1.7 Language Use: Classroom vs. Professional Training

The questionnaire revealed a shift in language dynamics depending on the environment. While interaction in the classroom often relies on Arabic or a mix of both, the professional training environment at Tayal pushes students toward more frequent use of English, driven by engineers' encouragement.

Table 2.6: Language Use Frequency by Environment.

Environment	Arabic Only	Both (Arabic/English)	English Only
Classroom Interaction	30.76%	61.54%	7.7%
Training at Tayal	15.38%	76.92%	7.7%

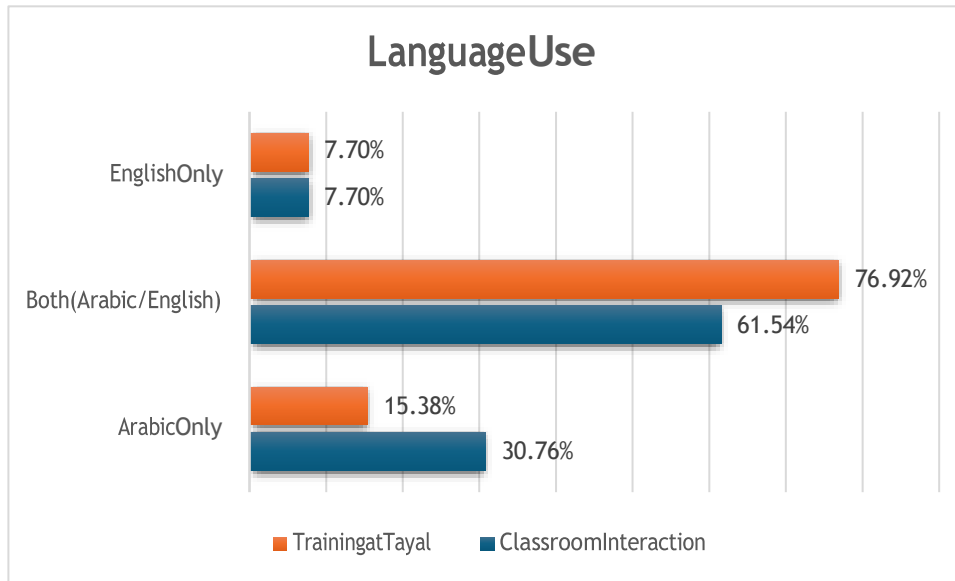


Figure 2.5: Language Use Frequency by Environment.

2.6.1.8 Workplace Environmental Factors and Professional Encouragement

To further evaluate the atmospheric factors influencing language adaptation at the workplace, the questionnaire investigated whether industrial professionals actively promote language practice on the shop floor. Table 2.7 displays the feedback regarding workplace encouragement.

Table 2.7: Engineers' Encouragement to Use English at Tayal.

Response	Frequency (N=26)	Percentage (%)
Yes	21	80.77%
No	5	19.23%

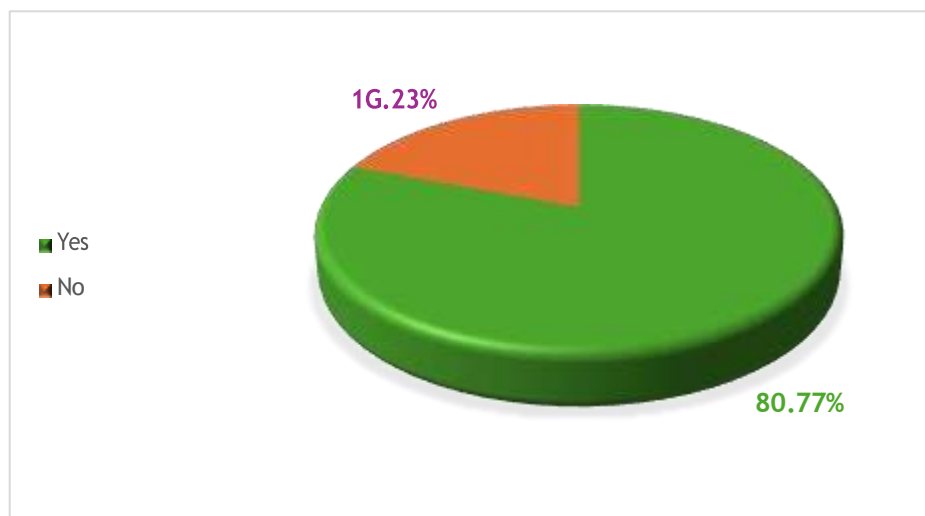


Figure 2.6: Engineers' Encouragement to Use English at Tayal.

The quantitative feedback reveals a highly supportive professional environment at the Tayal Company. An overwhelming majority of the participants (80.77%) explicitly stated that workplace engineers actively encourage them to utilize English during their practical shifts. This high percentage of professional encouragement serves as a strong external motivator for future textile engineers. It indicates that the industrial sector acknowledges the vital role of technical English, thereby putting direct communicative pressure on trainees to overcome their productive anxieties and utilize domain-specific terminology in real-time operational contexts.

2.6.1.9 Functional Analysis of Digital Tools

Based on the open-ended responses, the study categorized the digital tools used by students according to the linguistic skill they aim to improve. This highlights the "Self-directed Learning" aspect of the blended approach.

Table 2.8: Students' Use of Online Tools for Skill Improvement.

Online Tool/Platform	Specific Skill Targeted	Reported Benefit (Qualitative Data)
Google Translate	Vocabulary/Technical Terms	Understanding new words and instructions
YouTube/ Videos	Listening/Pronunciation	Improving hearing and correcting speaking
Telegram	Reviewing Materials	Replaying lessons to understand at a personal pace

2.6.1.9 Synthesis of Qualitative Findings

The open-ended section provided a nuanced view of the students' experience. A recurring theme among 70% of respondents was the "Receptive vs. Productive Gap". Students frequently mentioned, "I understand but I cannot speak," or "I use Google Translate when I don't understand words".

This qualitative evidence confirms that while students are motivated and encouraged by engineers to use English, their primary struggle is the production of speech and the fluency of communication. Consequently, the blended learning model is viewed by students as a "support system" that allows them to practice more and learn new words outside the traditional classroom hours.

2.6.2 Classroom Observation Analysis

The classroom observation was conducted over three distinct sessions to monitor the students' linguistic behavior and their interaction with the blended learning environment. The researcher used a structured checklist focusing on English usage, oral participation, and the integration of digital tools.

2.6.2.1 Case01: Face-to-Face Session (Initial Interaction)

- **Date:** 08/02/2026
- **Focus:** Evaluation of spontaneous oral production and communication barriers.

A short analysis of Session 1 demonstrated that a large number of students understood the main specialized concepts and could write about them in English. However, during speaking tasks, several students had difficulty expressing their ideas orally. Their participation in speaking tasks was low, probably because they did not have enough previous speaking practice and were not confident when using English.

Moreover, although students managed to complete the communication tasks and use technical vocabulary, many of them seemed unsure when answering questions from the teacher or their classmates, even when they knew the answer. This may be connected to factors for example fear of speaking in front of others or anxiety about making mistakes.

To improve these difficulties, students need more opportunities to practice speaking, interact more in class, and use English in realistic communication situations.

2.6.2.2 Case02: Online Session (Zoom & Telegram)

- **Date:** 15/02/2026
- **Focus:** Synchronous interaction and digital resource management.

The analysis of the online session revealed a greater degree of participation in written exchange than in spoken communication, as students appeared more at ease sharing their ideas through digital platforms. The integration of online tools provided opportunities for communication beyond the traditional classroom environment, which contributed to supporting learning and interaction.

The flexibility of the online environment appeared to reduce some psychological pressures often observed during face-to-face oral participation. However, despite the positive role of digital communication tools, technical problems such as unstable internet connection sometimes affected students' engagement and interrupted interaction.

In addition, Telegram supported collaborative learning by enabling students to exchange explanations, technical vocabulary, and academic support more quickly.

- **Observation:** Students showed a "High" level of engagement with online materials.
- **Finding:** The digital environment seemed to reduce "Language Anxiety," as students participated more actively through the Zoom chat box and Telegram comments than they did orally in the physical classroom.

2.6.2.3 Case03: Face-to-Face Session (Follow-up & Integration)

- **Date:** 16/02/2026
- **Focus:** Assessing the impact of online preparation on classroom performance.

The follow-up session indicated noticeable progress in students' readiness to engage, especially among participants who had participated in online activities before joining the classroom session. Students who used online materials appeared better prepared during speaking classroom tasks. (A sample of some instructional materials and course content related to Textile Engineering are in the appendices for reference) The blending of online preparation and face-to-face practice helped students remember specialized vocabulary and improve their communication skills. The observation findings demonstrate that blended learning can support the progressive development of professional communication skills by giving students chances to use language in both academic and professional environment.

Concluding Analysis

Overall, the findings from the classroom observation indicated that there was a supportive learning environment in which the students' English communication skills were being developed. Although the textile engineering students experienced some problems with English for speaking, such as linguistic and psychological problems, the learners had been able to participate effectively in communicative activities in the classroom by making use of online tools as well as more traditional methods of teaching and learning. In addition, it was also found that the blended learning approach had been able to encourage learner independence and had increased the level of involvement by learners in learning which was relevant to their current academic situation as well as to their future careers.

Conclusion

To conclude, this chapter has provided a comprehensive overview of the methodological framework adopted to investigate the impact of blended learning on the English communication skills of Textile Engineering students. By employing a descriptive research design, the study successfully integrated both quantitative and qualitative data through the use of a student questionnaire and structured classroom observations.

The detailed analysis conducted via SPSS and thematic coding revealed a significant consensus among students regarding the linguistic challenges they face, particularly in technical and professional settings like the Tayal Company. Furthermore, the observation of sessions via Zoom and Telegram highlighted the practical potential of digital tools in reducing communication anxiety and fostering a more engaging learning environment.

The findings presented in this chapter serve as a foundational evidence base for the upcoming discussion. They confirm that while traditional barriers such as limited vocabulary and hesitation persist, the strategic integration of blended learning elements offers a viable pathway for pedagogical improvement. In the following chapter, these results will be discussed in depth, linking them to the research hypotheses and providing practical recommendations for enhancing English for Specific Purposes (ESP) instruction within the department.

Chapter Three

Discussion of Findings, Pedagogical Implications, and Recommendations

Introduction

The final chapter of this study is dedicated to the discussion and interpretation of the findings obtained from the questionnaire and classroom observations. After presenting the data through SPSS and thematic analysis in the previous chapter, it is now essential to contextualize these results within the broader framework of English for Specific Purposes (ESP) and blended learning.

The primary aim of this chapter is to evaluate how the integration of digital platforms like Zoom and Telegram addresses the specific communication barriers faced by Textile Engineering students during their professional training at Tayal Company. The discussion is organized to directly answer the research questions and hypotheses presented at the beginning of this research. Furthermore, this chapter compares the results of the study with previous literature, discusses the pedagogical implications for the department, and some limitations encountered during the study. Through this discussion, the researcher aims to give a clearer understanding of how blended learning can help reduce the gap between academic English learning and professional technical needs. Through this discussion, the researcher aims to give a clearer understanding of how blended learning can help reduce the gap between academic English learning and professional technical needs.

3.1 Discussion of Findings

The findings obtained from the questionnaire and classroom observations revealed that communication difficulties among Textile Engineering students are multidimensional rather than purely linguistic. The results indicate that learners experience a combination of lexical, psychological, instructional, and situational barriers that collectively hinder their communicative performance in both academic and professional contexts. These difficulties cannot be interpreted as simple “lack of English knowledge”, but rather as an interaction between language competence, learning environment, and professional demands.

3.1.1 Communication Barriers and the Gap between ESP and Workplace Needs

Despite the importance of ESP in technical and professional fields, many students still face communication problems when they enter the work place. In many cases, what students learn in the classroom is different from what they actually need in real professional situations. This gap can affect student's confidence and performance at work.

These difficulties usually appear in different forms, such as technical lexical barriers, psychological barriers, and instructional and situational barriers.

A. Technical Lexical Barriers

The findings suggest that one of the most significant obstacles faced by students is the lack of technical vocabulary required in engineering contexts. According to the results in Table 03, the majority of students reported difficulties in understanding engineers' instructions during training at Tayal Company.

This clearly indicates that lexical deficiency is not marginal but central in communication breakdown. Nation (2001) emphasizes the central role of vocabulary knowledge in language comprehension and communication.

This means that vocabulary acts as the foundation for understanding and producing language, especially in specialized professional contexts where technical terminology is highly specific.

In ESP contexts, learners often fail not because they do not know grammar, but because they lack domain-specific terminology.

However, it is important to clarify that this lexical gap does not only reflect memorization failure. It reflects a deeper instructional issue: students are often exposed to general English rather than workplace-specific English. As a result, they are unable to transfer classroom knowledge into real industrial situations.

From a critical perspective, this suggests a mismatch between ESP curriculum design and actual professional needs. In other words, students are learning English as a subject, not as a working tool.

Moreover, observation data (Case 01) showed that students struggled to name machinery components even when they understood the general concept. This confirms that vocabulary knowledge in isolation is insufficient unless it is contextualized.

This idea is supported by Dudley-Evans and St John (1998), who argue that ESP teaching should be closely related to learners' professional and target situation needs.

This means that English instructions should reflect authentic workplace communication so that learners can apply classroom knowledge effectively in professional contexts.

Therefore, ESP instruction should not only teach vocabulary, but also simulate real workplace communication where that vocabulary is used meaningfully.

B. Psychological Barriers (Anxiety, Confidence, and Receptive–Productive Gap)

The results also demonstrate that psychological factors significantly influence learners' communicative competence. Approximately a large number of students stated, “I understand but I cannot speak,” which reflects a clear receptive–productive gap.

This finding is consistent with Horwitz et al. (1986, p. 128), who explain that “foreign language anxiety is a distinct complex of self-perceptions, beliefs, feelings, and behaviors related to classroom language learning.”

This shows that language anxiety is not simply fear of speaking, but a combination of emotional and psychological factors that negatively affect communication performance.

In the present study, classroom observation confirmed high levels of hesitation, fear of making mistakes, and avoidance of participation during oral interaction. This was particularly visible in face-to-face sessions, where students preferred silence or switching to Arabic rather than risking errors in English.

However, this anxiety becomes even more intense in professional environments such as Tayal Company, where communication has real consequences. This aligns with MacIntyre and Gardner (1994), who explain that anxiety increases in high-stakes communicative situations.

This indicates that students experience greater stress in workplace environments because communication is directly linked to professional performance and responsibility.

From a critical point of view, this suggests that the problem is not only linguistic but also affective. Even when students know the language, they may not use it due to psychological pressure.

Therefore, reducing anxiety is not optional in ESP teaching; it is a core requirement for communication development. Teachers should focus not only on linguistic accuracy, but also on creating supportive learning environments that encourage participation and confidence.

C. Instructional and Situational Barriers (Classroom vs Workplace Gap)

The findings also revealed a strong mismatch between classroom learning and workplace communication demands. In classroom settings, English is often used in a controlled

and limited way, while in professional training students are required to use English in real-time technical situations.

According to Dudley-Evans and St John (1998), ESP must be closely linked to learners' target situation needs.

This means that if classroom content does not reflect real professional communication, students will struggle to transfer their knowledge into workplace practice.

In this study, students reported experiencing a “linguistic shock” when moving from Arabic-dominant classrooms to English-required industrial training. This demonstrates that the problem is not only what is taught, but also where and how it is applied.

Observation data also revealed frequent code-switching between Arabic, French, and English. While code-switching can facilitate understanding, it also reflects limited fluency in professional English communication.

This suggests that students are still using English as a support language rather than as a fully functional professional communication tool.

This confirms that ESP teaching must move beyond theoretical classroom instruction and integrate authentic industrial exposure to reduce the gap between learning and practice.

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3.1.2 The Role of Blended Learning in Professional Readiness

The findings indicate that blended learning plays a significant role in improving both communication skills and professional readiness.

According to the questionnaire results, the vast majority of students agreed that combining face-to-face learning with online platforms enhances their learning experience and better prepares them for professional environments.

This supports Graham (2006), who defines blended learning as the integration of face-to-face instruction with technology-mediated learning environments.

This suggests that learning becomes more flexible and effective when traditional teaching methods are combined with digital tools and online interaction.

In this study, Telegram was mainly used for asynchronous learning, allowing students to review technical materials repeatedly. This repetition helps students internalize technical vocabulary and reduce cognitive overload, which is essential in ESP contexts where learners deal with complex terminology.

Similarly, Zoom sessions created a less intimidating environment where students could participate through written chat interaction. This reduced anxiety and increased participation, particularly among weaker students who hesitated during face-to-face communication.

From a pedagogical perspective, this aligns with Vygotsky's (1978) sociocultural theory, which emphasizes that learning develops progressively through interaction and scaffolding.

This means that learners first receive support from teachers and digital tools before gradually becoming independent communicators in professional situations.

Blended learning here is not simply a technological addition; rather, it acts as a cognitive and psychological bridge between academic theory and workplace practice.

3.1.3 Comparison of Findings with Previous Studies

The findings of this study are consistent with several previous studies discussed in the literature review. Similar to the findings of Nation (2001), the current research confirmed that technical vocabulary represents one of the main challenges faced by ESP learners in professional contexts. Students struggled to understand specialized terminology used during workplace communication and technical training.

The findings also support Horwitz et al. (1986), who emphasized the negative impact of language anxiety on oral participation and communication performance. The classroom observations conducted in this study revealed that many students hesitate to participate orally due to fear of making mistakes or being judged by others.

In addition, the results align with Mohammad (2026), who highlighted the importance of blended learning in improving students' engagement and communication skills in technical

education. The positive attitudes students expressed toward Telegram, Zoom sessions, and online materials confirm that blended learning provides learners with greater flexibility and opportunities for autonomous learning.

Similarly, Boumaraf (2025) argued that digital learning environments encourage learner autonomy and self-regulation. This was clearly reflected in the students' use of online tools to review lessons, improve pronunciation, and understand technical vocabulary independently.

The findings are also consistent with studies emphasizing the importance of situated learning in ESP instruction. The difficulties students faced during professional training demonstrate the need for more authentic communication practice that reflects real workplace situations.

However, while previous studies discuss these factors separately, this research shows that lexical, psychological, and situational barriers are interconnected rather than isolated.

3.1.4 Comparison between Traditional and Blended Learning Models

The findings of this study revealed several differences between traditional learning and blended learning environments in terms of students' participation, communication practices, and learning experiences.

In traditional face-to-face classrooms, students' participation was generally limited. Most learners relied on Arabic during interaction and showed hesitation when speaking English orally. Communication was mainly teacher-centered, and students often acted as passive receivers of information. Oral participation was relatively low, especially during activities requiring spontaneous communication or technical explanation.

In contrast, blended learning environments provided more flexibility and opportunities for interaction. Through platforms such as Telegram and Zoom, students were able to review lessons, access materials repeatedly, and participate in discussions with reduced anxiety levels. Online learning also encouraged students to become more autonomous and responsible for their learning process.

The implementation of blended learning in this study reflects some important models discussed in the literature review. First, the study showed characteristics of the Flipped Classroom Model, where online platforms were used to provide students with technical vocabulary, PDF lessons, and instructional materials before face-to-face sessions. This allowed classroom interaction to focus more on communication practice and feedback rather than simple content delivery.

In addition, the blended learning approach adopted in this study included elements of the Flex and Rotational Models. Through Telegram, students had greater control over the time, pace, and repetition of their learning. They were able to review technical lessons and materials according to their individual needs, which promoted learner autonomy and self-paced learning.

Another important aspect concerns the use of synchronous and asynchronous learning tools. Zoom sessions provided immediate interaction and direct communication between teachers and students, while Telegram functioned as an asynchronous platform allowing students to review lessons and technical explanations outside classroom hours. This combination helped students process difficult technical content more effectively.

Furthermore, blended learning contributed to the optimization of instructional time. By delivering technical vocabulary and theoretical materials online, face-to-face sessions could focus more on practical communication activities, interaction, and clarification of workplace-related situations. This approach helped students become more prepared before attending their professional training at Tayal Company.

The findings also revealed that blended learning created a more supportive environment for communication practice. During online sessions, students appeared more willing to participate through written interaction and chat discussions compared to traditional classroom participation. This suggests that digital learning environments may reduce communication anxiety and encourage students to express themselves more freely.

This shows that blended learning is not replacing traditional learning, but transforming it into a more interactive and student-centered model.

Overall, the comparison between traditional and blended learning models indicates that blended learning offers greater flexibility, autonomy, interaction, and support for professional communication development among Textile Engineering students.

3.2 Limitations of the Study

Despite the valuable findings obtained in this study, several limitations should be acknowledged. First, the study was conducted with a relatively small sample consisting of only twenty-six Textile Engineering students from the University of Relizane. Therefore, the findings cannot be generalized to all ESP learners or engineering students in Algeria.

Second, the duration of classroom observation and data collection was limited. A longer observation period could have provided deeper insights into students' communication development over time.

Another limitation concerns the reliance on self-reported data collected through questionnaires. Some students may have provided subjective responses based on personal perceptions rather than actual performance.

In addition, the blended learning tools used in this study were mainly limited to Telegram and Zoom. More advanced digital technologies and platforms were not included due to technical and institutional limitations.

Another important limitation was the difficulty of observing students directly during their professional training at Tayal Company. Since the training environment is industrial and professional in nature, the researcher had limited opportunities to observe students' communication practices continuously inside the company. This made it difficult to collect more detailed observational data regarding students' real workplace interaction and communication performance in authentic professional situations.

3.3 Pedagogical Implications

The findings of this study carry several pedagogical implications for ESP teaching and learning in technical and professional contexts.

3.3.1 Integrating Situated Learning Approach in the ESP Curriculum

ESP instruction should be more closely connected to authentic workplace situations. Teachers should integrate technical vocabulary, workplace scenarios, and professional communication tasks into classroom activities in order to prepare students for real industrial environments.

3.3.2 Optimizing the Blended Learning Model

Teachers should make greater use of blended learning tools to support students' communication skills. Digital platforms such as Telegram and Zoom can provide learners with additional practice opportunities, technical resources, and flexible learning environments that reduce communication anxiety.

3.3.3 Addressing Psychological and Proficiency Barriers

Teachers should encourage oral participation and create supportive classroom environments that reduce students' fear of making mistakes. More speaking activities, group discussions, and collaborative tasks should be integrated into ESP classes to build learners' confidence and fluency.

3.3.4 Strengthening University–Industry Partnerships

Greater collaboration between universities and industrial companies such as Tayal is necessary to ensure that ESP instruction reflects actual workplace communication needs. Professional training opportunities and authentic industrial materials should be integrated into the learning process.

3.4 Recommendations for ESP Teachers

ESP teachers are encouraged to focus more on communication practice and technical vocabulary related to students' professional fields. They should also integrate blended learning activities that combine face-to-face interaction with online learning support.

Teachers should encourage students to participate actively in discussions and provide continuous feedback to improve pronunciation and oral fluency. In addition, authentic

workplace materials and technical documents should be incorporated into classroom instruction.

3.5 Recommendations for Curriculum Designers

People who design courses need to build ESP programs that actually handle both university requirements and future job tasks at the same time. This means technical vocabulary, real workplace activities, group projects, and online tools cannot just be extra additions; they have to be main parts of the lessons. This idea is strongly supported by Vygotsky's (1978) sociocultural theory, which shows that students learn best when they talk and work together. As Vygotsky (1978) points out: "We propose that an essential feature of learning is that it creates the zone of proximal development; that is, learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with his peers" (p.90). This quotation means that learning grows through actual, everyday communication and social contact, not by sitting passively and memorizing rules.

In a similar way, blended learning environments promote interaction between students and teachers through authentic communicative tasks and technology-supported activities that reflect real professional contexts. This matches the core idea of Communicative Language Teaching (CLT), which argues that language is meant for real life. Finocchiaro and Brumfit (1983, as cited in Bataineh et al., 2011, p. 862) emphasize that the whole point of learning a language is communication and interaction. So, successful classes must focus on constant practice and active use, rather than studying grammar rules all by themselves.

Because of this, putting blended learning methods directly into ESP plans is the best way to make students more independent, help them think critically, and encourage teamwork. It gives engineering students the continuous speaking practice they need so they do not struggle when they enter modern workspaces.

3.6 Recommendations for Universities and Educational Policy Makers

Universities and policy makers need to give real support to blended learning. This means they must provide funding for online platforms, good tech tools, and training workshops for teachers. Also, universities have to work closely with local factories and companies. This is the only way to ensure that students receive practical communication training aligned with workplace demands. This idea fits perfectly with John Dewey's philosophy, which says that

education is useless if it doesn't connect to real-life experience. As highlighted in a scholarly discussion of Dewey's work, effective learning is grounded in "day-to-day experiences, dependent upon communication between people and among partners" (Jovanovic, 2016, p. 55). This reinforces the idea that education should not be separated from real-life contexts, but rather embedded in social interaction and experiential practice,

Finally, institutions should promote the integration of professional communication skills into technical education programmes in order to enhance students' employability and professional readiness.

3.7 Unexpected Findings

While most of the findings confirmed the initial assumptions of the study, some unexpected results emerged during questionnaire analysis and classroom observation.

One of the most noticeable findings was the difference between students' participation in face-to-face and online environments. Some students who showed limited oral participation during classroom sessions became more active during Zoom sessions, especially through written chat interaction. This finding suggests that digital environments may reduce students' fear and anxiety when communicating in English.

Another unexpected finding concerns students' use of Telegram. Although the platform was mainly used to receive lessons and materials from the teacher, students also used it informally to support each other by sharing explanations, translating technical vocabulary, and discussing difficult instructions related to their training at Tayal Company. This reflects the emergence of collaborative learning practices outside formal classroom instruction.

The study also revealed a strong dependence on digital translation tools such as Google Translate during training periods. Students frequently used these tools to understand technical terms and workplace instructions. However, classroom observation showed that excessive dependence on automatic translation sometimes led to inaccurate understanding of technical expressions and contextual errors. This indicates that although digital tools provide immediate support, overreliance on them may negatively affect students' lexical development and critical understanding of technical communication.

These unexpected findings demonstrate that blended learning environments do not only support language learning technically, but also influence students' psychological comfort, collaborative learning behaviour, and communication strategies.

3.8 Suggestions for Further Research

Based on the outcomes and limitations of the current study, several directions for future research are suggested to further explore the integration of blended learning in ESP contexts.

Future research could employ a longitudinal design to track the development of communication skills over a longer period, perhaps following students from their first year until their entry into the professional market.

It is also recommended to replicate this study in other technical departments, such as Mechanical or Electrical Engineering, to compare how different professional demands affect the effectiveness of blended learning models.

Subsequent studies could investigate the impact of advanced technologies such as Immersive Virtual Reality (IVR) and simulation-based learning on professional readiness and workplace communication.

Future researchers may also focus on specific language skills, including technical writing, oral presentations, or professional report writing in industrial contexts.

Another important area for future investigation concerns the role of Artificial Intelligence tools in supporting ESP students' communication development and learner autonomy.

Finally, future researchers are encouraged to explore students' and teachers' attitudes toward blended ESP learning in order to better understand the challenges, expectations, and pedagogical changes associated with technology-supported education.

Conclusion

This chapter provided a comprehensive discussion and interpretation of the findings obtained through the questionnaire and classroom observations. The results revealed that Textile Engineering students face significant communication barriers related to technical vocabulary, oral interaction, and communication anxiety during their professional training at Tayal Company.

The study also demonstrated that blended learning plays an important role in reducing these barriers by providing flexible learning opportunities, promoting learner autonomy, and supporting communication practice through digital platforms such as Zoom and Telegram.

Furthermore, the comparison with previous studies confirmed the importance of integrating situated learning and blended learning approaches into ESP instruction in order to bridge the gap between academic preparation and workplace communication requirements.

Despite certain limitations, the study highlighted several pedagogical implications and practical recommendations for ESP teachers, curriculum designers, universities, and educational policymakers. Overall, the findings suggest that blended learning can significantly contribute to improving English communication skills and enhancing professional readiness among Textile Engineering students in technical and industrial contexts.

General Conclusion

The core of this research focuses on how blended learning can help Textile Engineering students at the University of Relizane improve their English communication skills, particularly in preparation for the professional world. Success in the global industrial sector now depends heavily on English; it has shifted from being an advantage to becoming a professional necessity. Yet, a noticeable gap persists in Algerian universities, where students often struggle to apply English in technical and real-world situations. The first chapter of this research addresses this issue by establishing a theoretical framework that examines why engineering students face these specific communication hurdles. It specifically focuses on the contrast between learning English rules and actually using them in professional contexts. To bridge this gap, the study suggests blended learning as a practical alternative to traditional teaching methods, offering a more flexible, student-centered environment that integrates digital technology with classroom interaction.

For the practical side, Chapter Two describes the methodology used in this study. A descriptive case study approach was chosen to obtain a detailed and realistic understanding of the situation of Textile Engineering students at the University of Relizane. Data collection relied on two main tools: a student questionnaire and classroom observations. This allowed for a comparison between students' perceptions and what actually occurs during lessons. By using this combination of tools (triangulation), the research ensures that the final analysis is both balanced and reliable.

Data analysis in Chapter Three reveals a clear gap: while Textile Engineering students possess the necessary theoretical foundation in English, they struggle significantly when it comes to actual oral communication. Expressing ideas and using technical terminology in real-time situations remains a significant challenge. This mismatch is not only related to students themselves; it is also largely influenced by teacher-centered practices and a lack of confidence resulting from limited oral practice.

Interestingly, tools such as online platforms and communication applications are already present, but they are not being fully exploited to promote meaningful communication. The study suggests that, if blended learning tools are integrated more effectively, they can extend learning opportunities beyond the classroom and provide students with additional practice. Students clearly perceive English as an essential requirement for their future careers and industrial

training; however, they feel that the university does not fully prepare them for the communicative demands of professional and industrial environments.

Therefore, blended learning could represent an effective bridge between academic learning and professional communication needs in this field. Instead of relying only on theoretical instruction, moving toward interactive tasks and online discussions could increase student motivation and improve communicative competence. Of course, this study had certain limitations. The relatively small number of participants and the short observation period due to the students' schedule, which alternates between study and training limited the generalizability of the findings. In addition, the inability to access industrial training sites restricted the opportunity to observe authentic communication practices in professional settings.

For future research, it would be beneficial to investigate larger samples and conduct longer field studies, particularly within industrial environments, in order to identify more accurately the communication needs of future engineers. To conclude, this study demonstrates that mastering the theoretical aspects of English alone is not sufficient. For Textile Engineering students in Algeria to succeed in global professional contexts, English teaching practices should move beyond traditional methods toward blended and communicative approaches that emphasize real-world interaction rather than isolated theoretical knowledge.

Bibliography

- Abbas, L. (2015). Applying blended learning to English communication courses 101 and 102 at BZU/ Palestine (Case study). *Palestinian Journal of Open Education*, 5(9), 65–78.
- Abdat-Hadjadj, Y. (2024). Globalization and English language teaching: A glance into the status of the English language in the Algerian educational context. *Global Journal of Sociology: Current Issues*, 14(2), 85–95. <https://doi.org/10.18844/gjs.v14i2.9421>
- Abduqadir, H., & El-Sharif, B. (2025). Students' struggles with engineering and technical vocabulary: A case study of translation issues at the Higher Institute of Engineering Technologies, Benghazi. *African Journal of Advanced Studies in Humanities and Social Sciences (AJASHSS)*, 4(4), 353–360.
- Al-Harhi, Z. H., & Al-Salamalat, M. K. M. (2024). Al-ta'limal-mudmaj fitadrisal-lughahal-injiliziyyah bi-al-marhalah al-mutawassitah min wijhat nazar al-ma'allimat fi madinat al-Taif [Blended learning in teaching English at the intermediate stage from the perspective of female teachers in Taif City]. *Arab Journal for Quality Education*, 8(30), 213–252.
- Al-Badri, S. M., Al-Balooshi, A. M., & Al-Khadouri, T. R. (2021). Ittijahat talabat al-saff al-thani 'ashar bi-madaris muhafazat janub al-Batinah nahwa al-ta'lim al-mudmaj fi zill jaihat Covid-19 wa-mawa'iqistikhdamihi min wijhat nazarihim [Attitudes of 12th-grade students in South Al Batinah schools toward blended learning during the Covid-19 pandemic and obstacles to its use from their perspectives]. *Algerian Journal of Research and Studies*, 4(2), 17–37.
- Al-Harbi, N. N. S. (2022). Fa'aliyat barnamaj tadribimuqtarahqaim'alaal-ta'limal-mudmajli-tanmiyat al-maharat al-tiknolojiyyah lada ma'allimi al-'ulum bi-al-ta'lim al-ibtidai wa-atharuhu fi tanmiyat al-mafahim al-'ilmiyyah li-talamidhihim [The effectiveness of a proposed training program based on blended learning to develop technological skills among primary stage science teachers and its impact on developing their students' scientific concepts]. *Journal of Humanitarian and Natural Sciences*, 3(5), 671–710.
- Bailey, K. M. (2001). *Language teacher supervision: A case-based approach*. Cambridge University Press.
- Bakir, M. (2023). Assessing blended learning during the COVID-19 pandemic: Challenges and student perspectives at the Morsli Abdullah University Center in Tipaza. *Aleph: Langues, Médias et Société*, 10(4-1), 431–450.

- Bara, N. (2022). Relevance of adopting blended learning in the Algerian university. *Academic Review of Social and Human Studies*, 14(2), 89–97.
- Bataineh, R. F., & Thabet, S. S. (2011). Communicative Language Teaching in the Yemeni EFL classroom: Embraced or merely lip-serviced? *Journal of Language Teaching and Research*, 2(4), 859–866. <https://doi.org/10.4304/jltr.2.4.859-866>
- Belhouichet, F. Z. (2025). *Teaching and learning specific English language at ENS-Bouzaréah*. ENS-Bouzaréah.
- Belmehdi, S., & Zaghar, F. (2022). The utility of using English in business companies: A case of the Algerian context. *Al-Mutarğim*, 22(2), 195–212.
- Bouguebs, R. (2020). Action research on integrating a blended learning reading course in higher education. *Journal of Studies in Language, Culture and Society*, 3(1, Special Issue), 1–14.
- Boumaraf, A. (2025). Blended learning in EFL classrooms: Perceptions, challenges, and pedagogical innovations. *The International Journal of Human Studies*, 1(4), 105–116.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.
- Crystal, D. (2003). *English as a global language* (2nd ed.). Cambridge University Press.
- Djokhdem, M. (2025). Blended learning and quality challenges in university education: Towards a contemporary academic vision. *International Journal of Educational and Psychological Studies*, 8(31), 16–45.
- Dudley-Evans, T., & St John, M. J. (1998). *Developments in English for specific purposes: A multi-disciplinary approach*. Cambridge University Press.
- Fenech, R., Baguant, P., & Abdelwahed, I. (2020). Work readiness across various specializations. *Academic Journal of Interdisciplinary Studies*, 9(4), 86–94.
- Ghounane, N. (2023). English as the language of scientific research in Algeria. *Social Science Development*, 15(02), 204–215.
- Graham, C. R. (2006). Blended learning systems: Definition, current trends, and future directions. In C. J. Bonk & C. R. Graham (Eds.), *The handbook of blended learning: Global perspectives, local designs* (pp. 3–21). Pfeiffer.
- Horwitz, E. K., Horwitz, M. B., & Cope, J. (1986). Foreign language classroom anxiety. *The Modern Language Journal*, 70(2), 125–132.
- Kadri, S., & Hamada, H. (2016). Blended learning in academic writing: Realities and perspectives. *Revue Sciences Humaines*, A(45), 171–196.

- Kankaanranta, A., & Louhiala-Salminen, M. (2013). What language does global business speak? The concept and development of BELF. *Ibérica*, 26, 17–34.
- Kennedy, L. C. (2007). *Expanding test specifications with rhetorical genre studies and activity theory analyses* [Master's research paper, Carleton University]. Institutional Repository.
- Kimouche, A., Malki, F. Z., & Ayadi, A. (2025). English as a medium of instruction (EMI): Non-English major scientific teachers' expectancy & requirements vs. language learning challenges. *Journal of Studies in Language, Culture, and Society (JSLCS)*, 8(2), 182–196.
- Lester, S. (2014). Professional standards, competence and capability. *Higher Education, Skills and Work-Based Learning*, 4(1), 31–43.
- MacIntyre, P. D., & Gardner, R. C. (1994). The subtle effects of language anxiety on cognitive processing in the second language. *Language Learning*, 44(2), 283–305.
- Medjralou, A. H., & Zaoui, L. A. (2024). The challenges of using the English language in teaching horizontal standards among students of physical education and sports departments: A field study on students at Badji Mokhtar University - Annaba. *El Mesbah Journal in Psychology, Education Sciences and Orthophony*, 4(2), 76–91.
- Messaoudi, I. (2025). *English proficiency requirements in aviation: A case of Algerian air traffic controllers at Air High School Chahid El-Taib Djabar Tafraoui* [Master's dissertation, University Centre of Maghnia]. Institutional Repository.
- Mohammad, M. A. A. (2026). *A evaluative study of a blended learning model implemented in a vocational training organisation in Saudi Arabia* [Doctoral dissertation, Lancaster University]. Lancaster University Research Directory.
- Moore, M. G. (1997). Theory of transactional distance. In D. Keegan (Ed.), *Theoretical principles of distance education* (pp. 22–38). Routledge.
- National Association of Colleges and Employers. (2021). *Career readiness defined*. <https://www.nacweb.org/career-readiness/competencies/career-readiness-defined>
- Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge University Press.
- Nusong, K., & Watanapokakul, S. (2025). Evaluating the effectiveness of blended learning in an EFL undergraduate classroom. *LEARN Journal: Language Education and Acquisition Research Network*, 18(1), 320–351.
- Qasim, R. A. (2025, December 10). *Al-ta'lim al-mudmaj* [Blended learning]. New Education. <https://www.new-educ.com/blended-learning>

- Richards, J.C. (1990). *Conversational speaking: Approaches to the teaching of conversation*. In J.C. Richards (Ed.), *The language teaching matrix*. Cambridge University Press.
- Samawi, R.R. (2021). The status of fusing blended learning in teaching the English language at the primary stage from teachers' point of view. *Journal of Educational and Psychological Sciences*, 5(35), 145–159.
- Susandi, N.K.A., Baka, C., Judijanto, L., Yahya, M., Juliana, Sabaruddin, Bontisesari, Budiati, Haryani, & Sulistyorini, D. (2026). *English for specific purposes (ESP)*. Sonpedia Publisher.
- Talha, B., & Benhattab, A. L. (2022). The pedagogical challenges to teaching English for medical purposes: The case of the Faculty of Medicine at Sidi Bel Abbes University. *Educational and Didactic Research Review export*, 11(3), 463–480.
- van Weijen, D. (2012). The language of (future) scientific communication. *Research Trends*, 1(31), Article 3. <https://www.researchtrends.com/researchtrends/vol1/iss31/3>
- van Weijen, D. (2021). The language of (future) scientific communication. *Research Trends*, 31, 6–9.
- Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Watson, J., Powell, A., Staley, P., Patrick, S., Horn, M., Fetzer, L., Hibbard, L., Oglesby, J., & Verma, S. (2015). *Blended learning: The evolution of online and face-to-face education from 2008–2015*. International Association for K–12 Online Learning (iNACOL).
- Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge University Press.
- Zara, Z. M., Nordin, S. M., Isha A, S. N., (2023). Influence of safety communication on workplace safety in the oil and gas industry. *Frontiers in Public Health*, 11, Article 1225995. <https://doi.org/10.3389/fpubh.2023.1225995>
- Zeraouia, A., & Arar, S. (2022). EFL teachers' practices of blended writing instruction. *Qabas Journal of Studies Human and Social*, 6(2), 1674–1691.

Appendices

Appendix A: [Students' questionnaire]

Students' questionnaire

Dear Students,

This questionnaire is an investigation tool for gathering data required for the fulfillment of a master dissertation. It is done in order to collect information about Textile Engineering students' English learning experiences, the difficulties they face in English communication, and their views on the use of blended learning elements (face-to-face learning, online support, and training in the company). It also aims to understand how these elements may help students improve their English communication skills and prepare them for professional.

We would be grateful if you answer the following questions to help us to fulfill this research. Please, choose the appropriate answer according to your opinions by using a tick (✓) to indicate your chosen option, and justify your answers wherever it is needed.

Thank you in advance for your cooperation.

Section I: Personal Information / الأول الجزء: شخصية معلومات

1. Specify your gender: / جنسك حدد:

• Male / ذكر ☐

• Female / أنقى ☐

2. Have you received professional training at Tayal Company?

هل تلقيت تدريباً مهنيًا في شركة تايال؟

• Yes ☐

• No ☐

Section II: English Learning Background / الثاني الجزء: الإنجليزية اللغة تعلم خلفية

3. How would you describe your level of English?

كيف تصف مستواك في اللغة الإنجليزية؟

Very weak ☐
ضعيف جدا

Weak ☐
ضعيف

Average ☐
متوسط

Good ☐
جيد

Very Good ☐
جيد جدا

4. Which language do you mostly use in your daily communication?

ما هي اللغة التي تستخدمها غالبًا في اتصالاتك اليومية؟

Arabic ☐

English ☐

French ☐

5. Which language is mainly used during your technical studies?

ما هي اللغة المستخدمة بشكل أساسي خلال دراستك التقنية؟

Arabic ☐ English ☐ Both ☐

Section III: English Communication Difficulties / الثالث الجزء: التواص لصعوبات
باللغة الإنجليزية

6. Do you face difficulties when communicating in English?

هل تواجه صعوبات عند التواص باللغة الإنجليزية؟

Yes ☐ No ☐

➤ If yes, in which situations do you face more difficulties?

إذا كانت الإجابة بنعم، فأيًا بال حالات تواجه صعوبة أكثر؟

- Speaking in class / القسم داخل التحدث ☐
- Communicating during training at Tayal ☐
التواص أثناء التدريب في شركة "تايال"
- Understanding engineers' instructions ☐
فهم تعليمات وإرشادات المهندسين
- Other: ...

Section IV: English Use in Class and Training / الرابع الجزء: اللغة استخدام
الإنجليزية في القسم والتدريب

7. Which language is mostly used during classroom interaction?

ما هي اللغة الأكثر استخدامًا أثناء التفاعل داخل القسم؟

Arabic ☐ English ☐ Both ☐

8. During professional training at Tayal, which language is mainly used for

communication? / أثناء التدريب المهني في شركة "تايال"، ما هي اللغة المستخدمة بشكل أساسي للتواص؟

Arabic ☐ English ☐ Both ☐

9. Do engineers encourage you to use English during training?

هل يشجعك المهندسون على استخدام اللغة الإنجليزية أثناء التدريب؟

Yes ☐ No ☐

Section V: Blended Learning Support / المدمج التعلم عم

10. Do you receive online lessons or material through platforms such as Telegram?

هل تتلقون دروساً أو مواد تعليمية عبر الإنترنت من خلال منصات مثل "تيليجرام"؟

Yes ☐ No ☐

11. Do you think online material helps you understand technical content better?

هل تعتقد أن المواد التعليمية المتاحة عبر الإنترنت تساعدك على فهم المحتوى التقني بشكل أفضل؟

Yes ☐ No ☐ Sometimes ☐

12. Do you think combining classroom learning, online support, and company training can help improve your English communication skills?

عبر والد عمال القسم، داخل التعلم بينا الجمعاً تعتقد هل / الإنترنت، والتدريب بالشركة يمكن أن يساعد في تحسين مهارات التواصل بالغة الإنجليزية؟

Yes ☐ No ☐ Not sure ☐

13. In your opinion, blended learning elements can help you prepare better for

life. professional / في رأيك، يمكن لعناصر التعلم المدمج أن تساعدك على الاستعداد بشكل أفضل للحياة المهنية

Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly disagree ☐

Section VI: Open-Ended Questions / مفتوحة أسئلة

14. What difficulties do you face when communicating in English during your studies or

training? / ما هي الصعوبات التي تواجهها عند التواصل بالغة الإنجليزية خلال دراستك أو تدريبك؟

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15. In your opinion, how can online learning tools help you improve your English

skills? / في رأيك، كيف يمكن لأدوات التعلم عبر الإنترنت أن تساعدك على تحسين مهارات التواصل بالغة الإنجليزية؟

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Appendix B: [The Classroom observation checklist]**Classroom Observation Checklist**

(Blended Learning & English Communication – Textile Engineering Students)

General Information

Date:

_____ Ti

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_____ Te

acher:

Number of Students: _____

Type of Session: ☐ Face-to-face ☐ Online ☐ Blended**Section 1: Use of English in Classroom**

Item	Yes	No	Notes
Teacher uses English during instruction			
Students use English when speaking			
Students switch to Arabic/French frequently			
English is used for technical explanations			

Section 2: Students' Oral Participation

Item	High	Medium	Low	Notes
Students participate in discussions				
Students ask questions in English				
Students answer orally in English				
Students interact with each other				

Section3:CommunicationDifficulties

Item	Observed	NotObserved	Notes
Hesitationwhenspeaking Fear or anxiety Limitedvocabularyuse Pronunciationproblems Useofshort/simpleanswersonly			

Section4:Teacher'sRole

Item	Yes	No	Notes
Teacher encourages students to speak Teacherprovidesfeedbackonspeaking Teacher uses communicative activities Teacher allows student interaction			

Section5:UseofBlendedLearningTools

Item	Yes	No	Notes
Useofdigitaltools(videos,platforms) Students engage with online materials Online tools support understanding Technology encourages participation			

Section6:Students'Engagement

Item	High	Medium	Low	Notes
Attentionduringthelesson Motivation to participate Interaction with tasks				

Section7:GeneralComments

.....

AppendixC:[Onlinecourse]

الجمهورية الجزائرية الديمقراطية الشعبية

وزارة التعليم العالي والبحث العلمي

جامعة غليزان

كلية العلوم والتكنولوجيا - قسم هندسة الطرائق

People's Democratic Republic of Algeria

Ministry of Higher Education and Scientific Research

University of Relizane

Faculty of science and technology - Department of Process Engineering

Online course:

**Information, Expression and
communication techniques**



Presented by:

Miss, Amina Chaima Aroussi

Academic year:

2024/2025

Sessions: 02 (online)

Timing: 1h30 (02 weeks)

Credit: 01

Coefficient: 01

Chapter Objectives:

By the end of this chapter, learners will be able to:

1. Understand the importance of information literacy.
2. Apply effective search strategies.
3. Evaluate and analyze information critically.
4. Organize information for efficient use.

Description:

This chapter focuses on developing research skills to effectively find, evaluate, and structure information. It introduces search strategies using Boolean operators, reliable sources, and digital tools. Learners will also explore analytical techniques to assess credibility, relevance, and accuracy of information. Finally, the chapter covers organization methods, including note-taking, summarization, and categorization, to enhance efficiency in academic and professional work.

Introduction

In today's information-driven world, the ability to search, analyze, and organize information is essential for academic success, professional work, and decision-making. This chapter will provide a structured approach to effectively gathering, evaluating, and structuring information for various purposes.

Information: is an organized set of data that constitutes a message about a given phenomenon, helping to solve problems and make decisions. Information that is recorded and/or structured on paper or electronic media can be:

Organized, structured, formatted, stored, destroyed, secured, and protected, etc.

A scientific research = A dynamic, systematic, and rigorous process.