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ESP in the Digital Age: A Post-Project Evaluation of Distance Learning in the Algerian University

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ABSTRACT:

This paper reports on a post-project evaluation of a year-long online English for Specific Purposes (ESP) course in the Algerian higher education. The study explores students' perceptions of online ESP learning and to answer the following research questions: What are the attitudes of third-year students at the Department of Physics and Chemistry about a one-year online ESP instruction? What are the benefits and challenges they faced in their experience with distance ESP learning? The respondents expressed a positive response about learning ESP with noted improvements in English language skills and increased motivation attributed, in part, to the effective use of digital platforms. The findings offer valuable insights into the effectiveness of online ESP delivery and highlight factors contributing to successful distance learning.

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Introduction:

English for Specific Purposes (ESP) emerged and flourished as a new and distinct discipline in the field of English Language Teaching (ELT) during the post-Second World War era (1945). The latter was characterized by change and growth in different domains, especially in science and technology, accompanied by the increased need for English as an international language of science, technology, and business. ESP is a focused English learning and teaching situation based on "the needs of a specific population of students, employs methodologies and materials from the discipline it is centered on and focuses on the language and discourse related to it". (Dudley-Evans and Saint John, 1998, p. 125)

Unlike General English (GE) teaching and learning, which aims to enhance learners' learning skills and competencies, developing the four language skills, namely speaking, listening, reading, and writing, in parallel while teaching grammar and vocabulary, ESP is specialized English, focusing on learners' needs consideration. Most of the time, an ESP course is designed for adult learners to develop a set of professional skills and to perform profession-related activities. It follows, then, that an ESP course requires the implementation of "a teaching method that focuses on the learning process, emphasizes the exploitation of the learner's already possessed skills (learned at work or via academic study), and takes into consideration students' various learning styles (Hutchinson & Waters, 1987, p. 25).

ESP covers subjects ranging from Engineering, Business, and Medical Sciences to Tourism and Hospitality Management and centers more on language in context than on teaching the English structural and grammatical features. Within the ESP framework, English is not taught as a pure pedagogical subject far from learners' real life; instead, it is integrated into a subject matter of learners' area of interest, focusing on one language skill determined by analysis of needs to be the most needed by the learners, and the syllabus is designed accordingly. So, an ESP program focuses on what learners will need to do with the foreign language in the target learning situation and how learners might best master the language throughout the learning period. These needs may then be translated as program goals and objectives to serve as the foundation for developing and selecting teaching materials and learning activities. Accordingly, an ESP program may focus on developing a language skill depending on its need. An ESP course may be centered on developing subjects' speaking skills if they are trained to become spies or tourist guides. Another ESP course is to develop students' writing skills if they prepare to become academic writers and expert researchers.

I. ESP: a Continually Evolving Field in English Language Teaching

ESP appeared in the late 1960s as a sub-discipline in applied linguistics and began to develop as a distinct area of activity in the 1970s. Wilkins' (1976) Notional syllabuses and Munby's (1978) Communicative Syllabus Design were very influential in shaping a new era of ESP, which divorced the international traditional English language teaching based mainly on 'General English' programs designed for different categories of learners. The new approach called for more exactly designed curricula to meet the needs of specific learners according to their respective fields. Consequently, creating an ESP course requires a thorough analysis of learners' level of instruction, needs in a specific area, and consideration of purposes, tasks, and activities for which English is required.

Needs analysis is an essential parameter in the ESP domaine. Researchers in the field (Munby, 1978; Hutchinson & Waters, 1987; Dudley-Evans & Saint John, 1998) have stressed needs' analysis as a critical element of research upon which ESP curricula should center. Robinson affirms that "needs analysis is usually considered fundamental to ESP" (1991, p.7). Syakur et al. (2022) carried out a research project in the field of pharmacy in which they recognized the importance of needs analysis in the development of applications to address the specific needs of pharmacy students.

In parallel, the purpose of instruction is a crucial consideration when designing an ESP course. In this context, Mackay and Mountford argue that "ESP is generally used to refer to the teaching of English for a utilitarian purpose." (1978, P. 2). This means that English should be taught in a way that equips students with specific language skills for real-life situations, enabling them to use English in their future profession or to understand English discourse related to their area of specialization.

II. The Rise of Online Education and its Implications on ESP Instruction

The growth in the popularity of online learning has been a trend in recent years, a tendency accentuated by the impact of COVID 19. Online education involves delivering teaching materials and guidance through digital platforms. The evolving technology landscape is transforming the ESP field, enabling learners to access many first-hand resources and participate in myriad learning experiences from home. Kubo (2009) proposed that online education presents an alternative to schooling, offering increased flexibility, accessibility and cost-effectiveness for a broader spectrum of students. Dou et al. (2023) emphasized

the role of technology in shaping the direction of ESP education, highlighting the utilization of online platforms, e-portfolios and the development of a new era in ESP teaching practices. As a result, online education has pushed forward learning tools and innovative teaching approaches.

III. Leveraging Technology for Enhanced ESP Learning and Teaching

Myriad applications and digital teaching platforms have been created and implemented since the COVID-19 pandemic (2019) to ensure continuous instruction and bridge the gap between teachers and learners imposed by the lockdown. Syakur et al. (2022) developed an application named "Absyak". The latter refers to a Moodle-based learning platform designed specifically for pharmacy students based on interactive learning. This platform integrates interactive elements: animations, videos, quizzes, and writing activities. It is oriented towards enhancing learners' speaking skills. It is a solid background that can be referred to as a model for developing further online ESP resources in different domains. However, speaking is not the only productive skill to be a subject of ESP online research. Su et al. (2017) conducted a research project in which they explored the importance of online writing platforms in enhancing students' writing proficiency. The study's results showed positive results regarding students' writing performance and engagement. The participants exhibited improvement in their writing achievements and elevation in their levels of motivation. Moreover, they expressed their potential preference for distance learning through the various digital platforms compared to the traditional face-to-face teaching/ learning methods.

In the teaching/ learning realm, students are the parameter around which learning is centered. However, as there is no teaching without teachers, the latter are also concerned by the new era trend and are required to use the online applications and tools designed for students and others developed mainly to enhance their teaching skills in the light of the digital era. Xu et al. (2018) explored the importance of training ESP teachers on how to exploit the online applications to ensure successful distance learning. The study's results were very positive regarding teachers' professional development. They could access diverse resources, adapt their teaching methods, and engage with more interactive teaching materials and assessment methods with learners. Moreover, this method was not restricted to teaching and training ESP learners; it offered an opportunity for collaboration among ESP teachers through forums for sharing materials and exchanging teaching experiences to foster a sense of a larger teaching community.

Evaluation of the learning situation is a crucial element of the whole process. It is worth mentioning that online teaching/ learning must be culminated by online evaluation to address the teaching elements' strengths and weaknesses, including the delivery media. Zhu (2020) found that E-portfolios and apps serve as aids that can create an evaluation system for ESP, contributing to language assessment and the advancement of the field. Zhu's (2020) study focuses on how e-portfolios and apps have the potential not just to improve but also transform ESP assessment practices, offering a hopeful and optimistic view of the future of ESP education. ESP learners' listening and speaking skills. By blending online learning models, an interactive educational journey can be created for students.

IV. Advantages of Teaching ESP Online

Researchers in the field of Language Teaching and Education (Keegan, 2001; Warschauer, 2003; Bates, 2015) pointed to the numerous advantages of distance ESP instruction. Some of its benefits are listed below

1. Accessibility/ Flexibility and Cost Effectiveness

Providing online ESP instruction represents an opportunity to both instructors and learners to access the language instruction wherever they are, transcending the locational barriers. Moreover, they are offered the opportunity to learn at their own pace, as they can access the learning platform at any moment. (Warschauer, 2003).On the other hand, accessing digital learning platforms from home would help students save much money and reduce efforts by eliminating transportation and accommodation costs associated with face-to-face learning. Institutions also can reduce infrastructure costs.

2. Personalization and Tailored Guidance

Digital learning through various platforms and applications provides room for teachers to accommodate their teaching practices to meet the needs of different learners and discover their potential strengths and weaknesses. This would create a healthy environment of learning empowered by personalized feedback (Bates, 2015).

3. Varied Learning Resources

Online ESP courses, particularly, involve interactive teaching/ learning through the incorporation of diverse multimedia resources to enhance learners' engagement and match the profile of digital learners. Such resources include videos, interactive materials and authentic data from software tools. These teaching materials help learners to learn effectively both in the digital world and the real one.

4. Interactive Communication and Collaboration

It has been observed that virtual platforms help students communicate better, as they offer students myriad practice opportunities for interaction and communication with a broader audience. As such students can potentially participate in debates and take part in various discussions to share ideas about diverse topics of interests with peers from different social backgrounds and different speaking communities who are using English for the same sake (Dziuban et al., 2018). Through interchange and communication, learners develop their language skills and communicative competence.

5. Lifelong Learning and Professional Development

Online ESP courses not only support learning but also professional development. They provide professionals with continuous opportunities to enhance their language skills, stay updated on industry terminology, improve communication skills, and further their education. This emphasis on continuous learning makes ESP online courses a valuable long-term investment in a professional's career. (Keegan, 2001).

V. Challenges in ESP Online Instruction

While online platforms offer advantages for ESP education, it is important to acknowledge the challenges teachers and learners face using digital platforms. While teaching ESP online offers many advantages, certain practical aspects, such as hands-on training or physical equipment used in specific fields, may be challenging to replicate in an online environment (Anderson & Garrison, 2010). Minasyan et al (2018) argued that educators confront a multifaced challenge. On the one hand, they must adapt their teaching practices to accommodate the demands of a digital or a blended learning environment. On the other hand, they must check for appropriate online resources that match their teaching practices and ensure they are accessible to all learners. They are also required to design activities that allow students to improve their autonomy and engage in life-long learning. Nonetheless, online teaching platforms continue to evolve, offering innovative solutions to address such limitations and provide effective online ESP instruction to accommodate the teaching practices to the demands of a distance or blended learning environment.

VI. Research Design and Methodology

This study summarizes findings from a post-project evaluation conducted at the Teachers' Training School of Constantine in Algeria, focusing on students' perceptions of the effectiveness of online ESP instruction. Post-project evaluations are beneficial for researchers to discover and understand the

shortcomings of planning and implementing more successful future projects. Project evaluation must be conducted at the different stages of the project, but the evaluation is crucial at the end of the project. "During the termination phase, a post-project evaluation needs to be conducted to measure the project's success in terms of its original and modified objectives." (Anbari, 1985, p. 25).

The data-gathering tool selected by the researcher to collect the relevant input was a survey questionnaire because of its utility in gathering data from a wide audience at a minimum cost of time, money, and energy. The researcher administered a 16-item questionnaire to twenty-four third-year university students majoring in Physics and Chemistry who took part in an online ESP course during the academic year 2022-2023. By examining students' learning experiences, educators can enhance their understanding of distance ESP teaching methods. Moreover, the feedback obtained from the participants would be valuable to the research community. The goal of a post-project review is to use the project analysis results to improve future project management methods and practices on one side. On the other side, within the framework of this research, it would be crucial for the researcher to answer the research questions:

- What are the attitudes of third-year students at the Department of Physics and Chemistry about a one-year online ESP learning?
- What are the main benefits and challenges students face in their experience with distance ESP learning?

1. Population

The sample population who participated in the present research was a set of twenty-four third-year undergraduate students at the Department of Physics and Chemistry at the ENSC. The sample individuals experienced a year of online ESP learning during the academic year 2022-2023 via three teaching platforms: Zoom, Google Meet, and the Moodle platform. The latter was the most relied on, as it is the official academic platform of the school and because of the diverse applications for teaching and assessment it offers. The participants were sent a questionnaire in Google Forms format, which they answered and sent back to the researcher. The questionnaire was delivered to all the class members who participated in the project. Though the class comprised thirty-two students, only twenty-four students submitted their responses. It is worth mentioning that the students suffered from poor internet connection throughout the year of instruction, especially when they were on the campus. Most of them could submit their assignments only when they visit their families on the weekends, benefiting from

better internet quality. Accordingly, it may be for the same reason that the eight students were prevented from submitting their responses.

2. Description of the Questionnaire

The questionnaire was prepared by the researcher who ensured online teaching at the Department of Physics and Chemistry. All the questions were tailored to meet the English proficiency level of the heterogeneous class respondents.

The survey questionnaire was made of four main sections, each containing four questions varying between open-ended and close-ended questions, depending on the objective of each prompt and the data it is supposed to elicit. A close-ended item is a question to which the researcher provides a restricted range of possible responses from which the respondents may choose. On the other hand, an open-ended prompt gives the subject the freedom to say whatever he wants and how to say it.

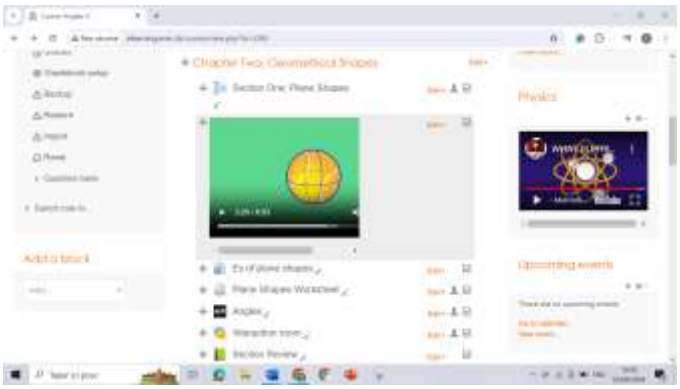
The four sections are designed to explore participants' views about four main pillars which architect the general course design: online teaching pedagogy, implementation of technology in teaching, the main gains and benefits from this instruction, and finally the potential challenges faced by participants during this experience. Accordingly, the first section, General Perceptions of ESP, aims to inquire about the respondents' English proficiency level and their perceptions about the importance of ESP learning and its relationship with the job market and future careers. Section Two, titled Online Course Experience, tackles respondents' gains from the ESP online program regarding English communicative skills and Physics-related skills like technical vocabulary mastery. Section three, Use of Technology in Online ESP, seeks to investigate learners' different opinions about the usefulness of technology in making learning more accessible and more enjoyable, especially with the diversity of media like videos, simulations, and interactive learning content. Moreover, the section contains a question prompt to investigate the respondents' ability to conduct lifelong and autonomous learning after their ESP learning experience. The last section, the Overall Evaluation of Online ESP Course, examines the advantages and potential challenges respondents faced during their experience and whether they recommend the course to other students. By the same token, respondents were given the floor to provide suggestions to enrich the course content regarding teaching materials, delivery media, or strategies and techniques that could improve the course.

3. Data Analysis and Discussion

The present paper reports a post-project evaluation conducted at the ENSC during the post-covid period. The paper explores undergraduate students' perceptions of online ESP instruction at the Department of Physics and Chemistry. The project's objective was to investigate online ESP instruction's positive and negative aspects at the Department of Physics and Chemistry. ESP has always been a significant part of all non-English departments at the ENSC. However, within the framework of this project, ESP is subject to distance teaching with extensive use of technology. The project did not consist of PDF and Word files posted via some teaching platforms. On the contrary, interactive content was guaranteed, and different teaching and assessing online methods were employed, such as multimedia presentations, simulations, and gamification. (Figure n° 1)

At the end of the study, students were asked to respond to a questionnaire as part of the end-project evaluation to cater to their perceptions about the experience they were involved in and report its advantages and disadvantages. The main objective of this post-project review is to improve the teaching/ learning situation in the light of the new digital era and to confront the challenges faced by both teachers and learners related to online learning and digital literacy, offering insights to practitioners and curriculum designers about tested methods and successfully implemented strategies. Also, the elicited data would serve as layers for future research and benefit other researchers in the field by bringing about a better form of online ESP instruction and planning further projects.

Figure n° 01: Example of a learning management system interface for a distance learning course.



a. Section 1: General Perceptions of ESP

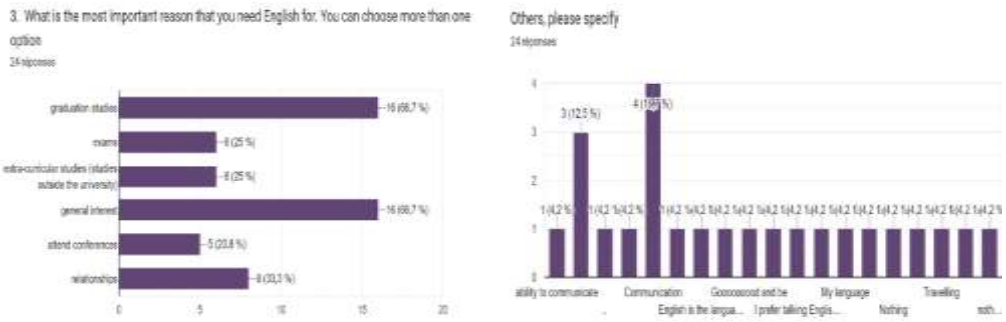
The statistical analysis of the quantitative data elicited from the questionnaire has shown that almost all students (97. 2%) know how valuable English instruction is to their learning career and job prospects. However, the class looks

heterogenous, as respondents hold dissimilar perceptions about their proficiency level in English (good, 25%; average, 54.2%; bad, 12.5%). When asked about reasons underlying respondents' learning of English, answers varied according to learners' interests as shown in (Figure n° 2). ; however, the highest rate was shared among graduation reasons and personal interests with a rate of 66.7%, followed by using English for connecting with people and engaging in social relationships (33.3%). Pedagogical reasons expressed in exams and extra-curricular activities were equally rated (25%). Some respondents (20.8%) expressed their desire to learn English to attend conferences.

By the same token, students were asked to report any other reasons motivating them to learn English. Most answers were centered around communication reasons and travel. One of the respondents reported:

"*I need English for my future life, and I love this language, so I want to learn more about it*."

Figure n° 02. Reasons for learning English among distance learning students



The last question in this section targets respondents' awareness of their professional development: How important do you think it is to learn English for your future career? Participants belong to a Teachers' Training School specialized in preparing future educators and ensuring jobs for the enrolled the pre-service teachers. The latter do not care about getting a job. However, the job market is competitive, and ESP proficiency helps to create a more proficient and experienced teacher. Respondents pointed to the quickly changing quality of the world of science and the urgent need to keep up with the most updated discoveries related to their field of interest. They already think about autonomous and life-long learning (Keegan, 2001). Some of them provided the following answers:

- *The world of science is changing every day, and I must know.*
- *I must know my specialty very well.*
- *When I graduate from here, no one will teach me the updates, and I will become ignorant.*

- *Reading in English is very important for us.*

b. Section 2: Online ESP Course Experience

The ESP course content was delivered solely online, and most respondents (70.8%) preferred online English learning rather than face-to-face learning (Figure n° 03). Kubo (2009) proposed that online education presents an alternative to schooling, offering increased flexibility, accessibility and cost-effectiveness for a broader spectrum of students. On the opposite side, (20.2%) considered traditional learning in the form of presence learning better than distance learning. This portion may reflect those learners who struggle with the language and need assistance to understand the lesson components. This critical pedagogical situation is the result of administrative reasons. Learners have been assigned to their classes without any consideration of their English proficiency levels, as no needs analysis was carried out; though, it is a critical layer of ESP curriculum design according to researchers in the realm of ESP research throughout the last fifty years (Munby, 1978; Hutchinson & Waters, 1987; Dudley-Evans & Saint John; Syakur et al. ,2022).

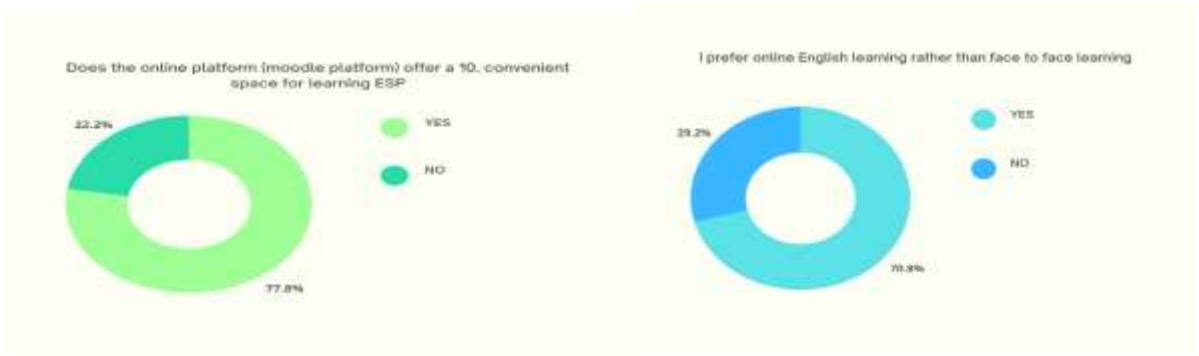
The course content was mainly delivered through the official academic teaching platform Moodle; nevertheless, other teaching platforms were used less frequently, such as Google Meet and Zoom. Most respondents preferred online English learning rather than face-to-face learning and were satisfied with learning via the Moodle platform (77.8%), whereas (22.2%) considered traditional learning reflected in presence learning better than distance learning. (Figure n° 03). More than half of the respondents (66. 7%) confessed that online tutoring and feedback sessions contributed to their improvement in learning ESP, in contrast to (33.3%) who did not see any obvious utility of these strategies.

Additionally, respondents expressed satisfaction with the role of ESP instruction in developing their English communicative skills and technical vocabulary in Physics. Students can engage in discussions, chat with peers, and participate in video calls to share thoughts, collaborate on projects, and enhance their language abilities within a community setting. This aligns with previous research by Dziuban et al. (2018) who acknowledged that through online interchange and communication with peers from different places of the world and diverse social backgrounds, learners develop their language skills and communicative competence

Most respondents (91, 7) acknowledged that all the lessons and the materials presented were directly related to their field of specialty, namely physics. Surprisingly (87, 5) of the participants felt motivated to attend the ESP online

course. This portion includes even those who previously reported preferring traditional face-to-face learning. This reinforces the previously stated claim that some students need help and assistance in terms of language, or they should have been assigned to another class that matches their English proficiency level if a thorough needs analysis has been carried out.

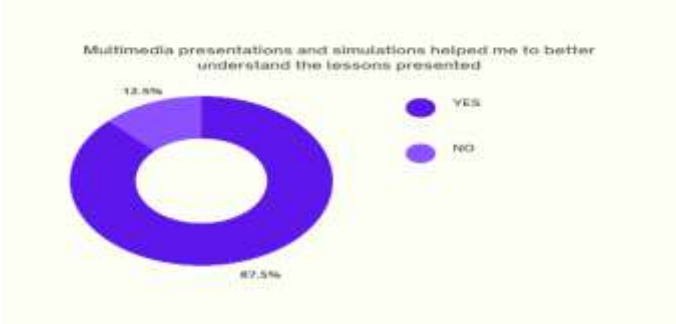
Figure n° 03: Students' perceptions of the online learning environment for ESP.



c. Section 3: Use of Technology in Online ESP

The project, however, is more comprehensive than delivering traditional ESP lessons posted via Moodle platform. On the contrary, the course provides interactive content with diverse materials and language drills that engage learners in different types of communication. When asked about the online resources and materials the teacher was using in the ESP course, most respondents represented by seventy-nine-point two per cent (79.2%) expressed a positive response, as they found the online materials very helpful in developing their ESP skills, especially that all the materials presented through the different media were directly related to their field of specialty according to 97.3%. In parallel, (87.5%) expressed their positive attitudes about multimedia presentations and simulations and their valuable contribution in understanding the lessons presented (Figure n° 04). This aligns with the different works of scholars (Su et al., 2017; Syakur et al., 2022) who developed different teaching applications to improve learners speaking and writing skills and raise their engagement in distance learning.

Figure n° 04: Impact of multimedia presentations and simulations on online ESP Learning.



When asked on how confident they were in their ability to continue learning English independently using technology after the one-year online ESP instruction they had, most respondents (75%) felt confident about their ability to carry on online ESP learning and ensure future professional development (Table n° 01). According to Keegan (2001), continuous learning makes ESP online courses a valuable long-term investment in a professional's career, as they multiply opportunities for autonomous and independent life-long learning. Consequently, it would guarantee career development and widen professional prospects.

Finally, respondents were invited to name any challenges they may have faced during their ESP learning journey. The analysis of their responses can be summarized in the difficulty of developing speaking skills. Though the course provided was interactive and offered space for interaction and collaboration, respondents found that it was not enough to develop their speaking skills. This is due to the heterogeneity of the group. As learners hold different English proficiency levels, they cannot follow in the same way.

Some of the provided insights are reported here:

- *It is very challenging because it needs so much time.*
- *I found difficulties to develop my speaking skill.*
- *It is difficult to find a friend who is interested in the same type of ESP I am learning.*
- *We can't discuss with each other like in the classroom.*
- *The teacher is not here to correct my mistakes.*

The above insights are congruent with Anderson & Garrison's (2010) observations. The latter reported challenges in transferring certain types of teaching materials and strategies from onsite instruction to online platforms with the same success. Similarly, respondents argued that online learning does not

ensure the perfect sitting to develop the speaking skill, depriving students of classroom interaction and immediate feedback.

Table n° 01: Self-reported confidence levels in independent English learning among surveyed students.

Options	Number	Percentage
Very confident	18	75,00 %
Confident	4	16.66%
Slightly confident	2	8.33%
Not confident at all	00	00%

Conclusion:

This paper presents a summary of a post-project evaluation report of a study conducted at the Department of Physics and Chemistry at the ENSC to investigate students' perception of online ESP instruction after a one-year experience. Results of the mixed-methods research study acknowledged that students hold positive perceptions about their experience. Their testimonies revealed that their English proficiency level improved and felt more engaged to learning ESP, especially through the digital tools and the online applications. Participants noted that thanks to the online instruction they benefited from, they feel more autonomous and can engage in future independent learning. The results elicited from this post-project evaluation offer valuable insights into the efficacy of online ESP delivery and highlight factors contributing to successful distance learning that can be utilized for future initiatives.

References:

Anbari, F. T. (1985). A systems approach to project evaluation. *Project Management Journal*, *XVI*(3), 21–26.

Anderson, T., & Garrison, D. R. (2010). *Learning and teaching in online environments: Foundations of practice*. Routledge.

Bates, T. (2015). *Teaching in a digital age: Guidelines for designing teaching and learning*. BCcampus Open Education.

Dou, Y., Chen, R., & Li, L. (2023). English for specific purposes in the digital age: A new perspective. *Journal of English for Academic Purposes*, *64*, 101084.

Dudley-Evans, T., & St. John, M. (1998). *Developments in English for specific purposes*. Cambridge University Press.

Dziuban, C. D., Graham, C. R., & Dziuban, J. D. (2018). Blended learning: An introduction. In *Blended learning: Designing for interaction and engagement* (pp. 1-15). Routledge.

Hutchinson, T., & Waters, A. (1987). *English for specific purposes: A learner-centered approach*. Cambridge University Press.

Keegan, D. (2001). *Foundations of distance education*. Routledge.

Kubo, M. (2009). The future of online learning: Transforming education and the academy. *Journal of Asynchronous Learning Networks*, *13*(4), 3-14.

Mackay, R., & Mountford, A. (1978). *English for specific purposes*. Longman-Pearson.

Mumby, J. (1978). *Communicative syllabus design*. Cambridge University Press.

Starfield, S. (2013). ESP: A history of the field and its impact on English language teaching. In H. Basturkmen (Ed.), *The handbook of English for specific purposes* (pp. 1-28). Wiley-Blackwell.

Su, Y., Shen, C., & Zhang, D. (2017). The effects of online writing platforms on students' writing proficiency: A meta-analysis. *Computer Assisted Language Learning*, *30*(8), 721-742.

Warschauer, M. (2003). Technology and second language learning: A critical review. *Language, Culture and Curriculum*, *16*(2), 102-110.

Wilkins, D. A. (1976). *Notional syllabuses*. Oxford University Press.

Xu, S., Li, B., & Zheng, Y. (2018). Integrating LMS and PLE for ESP teacher training: A case study. *Computer Assisted Language Learning*, *31*(3), 243-260.

Yan, X., & Li, L. (2018). Big data, cloud computing, and information sharing in ESP: A new paradigm for needs analysis. *ESP Journal*, *37*(2), 125-136.

Zhu, S. (2020). E-portfolios and apps: Revolutionizing ESP assessment. In H. Basturkmen & R. Chen (Eds.), Advances *in English for specific purposes* (pp. 263-287). Springer.