

TRANSFORMING ESP LEARNING THROUGH AI, CORPUS-BASED METHODS, AND TEACHER WELL-BEING

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Abstrak

Perkembangan teknologi digital telah mengubah paradigma pengajaran English for Specific Purposes (ESP) di berbagai institusi pendidikan tinggi. Artikel review ini bertujuan untuk menganalisis transformasi pedagogi ESP melalui empat aspek utama, yaitu kesejahteraan psikologis pengajar, metodologi Data-Driven Learning (DDL), integrasi kecerdasan buatan (Artificial Intelligence/AI), dan tantangan pembelajaran campuran (blended learning). Kajian ini menggunakan pendekatan studi pustaka dengan menelaah berbagai artikel ilmiah dan buku yang dipublikasikan hingga tahun 2024. Hasil kajian menunjukkan bahwa keberhasilan implementasi ESP di era digital tidak hanya dipengaruhi oleh kecanggihan teknologi, tetapi juga oleh kesiapan psikologis pengajar dan dukungan sosial dalam proses pembelajaran. Metodologi berbasis korpus melalui model “6 Is” mampu meningkatkan kesadaran linguistik mahasiswa secara induktif, sedangkan AI seperti ChatGPT efektif dalam meningkatkan keterampilan menulis dan kemandirian belajar mahasiswa ESP. Namun demikian, blended learning masih menghadapi tantangan sosial berupa rendahnya motivasi, keterasingan belajar, dan minimnya interaksi emosional. Artikel ini menyimpulkan bahwa integrasi harmonis antara teknologi digital dan peran manusia menjadi faktor utama dalam masa depan pedagogi ESP.

Keywords: Esp, Kecerdasan Buatan, Pembelajaran Berbasis Data, Blended Learning, Teacher Immunity, Otonomi Pembelajar

Abstract

The development of digital technology has transformed the teaching of English for Specific Purposes (ESP) across various higher education institutions. This review article aims to analyze the transformation of ESP pedagogy across four main aspects: teacher psychological wellbeing, the Data-Driven Learning (DDL) methodology, the integration of Artificial Intelligence (AI), and the challenges of blended learning. This review uses a literature review approach, reviewing various scientific articles and books published up to 2024. The results indicate that the success of ESP implementation in the digital era is influenced not only by technological sophistication but also by psychological preparedness, teacher engagement, and social support in the learning process. Corpus-based methodology using the "6 Is" model can inductively increase students' linguistic awareness, while AI, such as ChatGPT, can effectively improve ESP students' writing skills and learning independence. However, blended learning still faces social challenges such as low motivation, learning alienation, and minimal emotional interaction. This article concludes that the harmonious integration of digital technology and human roles is a key factor in the future of ESP pedagogy.

Keywords: ESP, Artificial Intelligence, Data-Driven Learning, Blended Learning, Teacher Immunity, Learner Autonomy

INTRODUCTION

English for Specific Purposes (ESP) is a branch of English language instruction designed to meet specific academic and professional needs. In recent decades, ESP has evolved significantly as the need for global communication across business, technology, healthcare, agriculture, and education has increased. The digital transformation occurring in education has also driven significant changes in ESP pedagogical approaches, particularly following the development of Artificial Intelligence (AI), corpus linguistics, and online learning.

According to English for Specific Purposes, language learning no longer focuses solely on grammar mastery but also on specific communication skills tailored to professional needs. Therefore, pedagogical approaches in ESP must be adaptive to social and technological changes. In this context, digital technology is a crucial tool for improving learning effectiveness, enhancing access flexibility, and fostering student independence.

However, the transformation of ESP pedagogy is not solely related to technological innovation. Human factors, particularly teachers' psychological wellbeing, play a crucial role in the success of learning implementation. The concept of teacher immunity is a major concern because ESP teachers often face academic pressure, administrative demands, and technology-driven curriculum changes (Hiver, 2017). Teachers with strong emotional regulation and psychological resilience tend to adapt to pedagogical changes more effectively.

Furthermore, developments in corpus linguistics have introduced a Data-Driven Learning (DDL) approach that enables students to learn authentic language patterns through independent

exploration of language data. This approach transforms students into "language detectives" who actively discover linguistic patterns through corpus analysis (Johns, 1991). Furthermore, the emergence of generative AI, such as ChatGPT, presents new opportunities in ESP teaching, particularly for improving academic writing skills and fostering learner autonomy.

However, implementing blended learning in ESP also poses social and motivational challenges. Limited online interaction often leads to student learning isolation, low participation, and a lack of emotional support. Therefore, this study aims to comprehensively examine the transformation of ESP pedagogy through the integration of AI, corpus-based methodologies, and teacher psychological factors in the context of digital learning.

METHOD OF THE STUDY

This article uses a descriptive-critical literature review. Data sources were obtained from reputable international journal articles, scientific proceedings, and academic books published through 2024. The study focuses on four main themes: teacher immunity, Data-Driven Learning (DDL), AI integration in ESP, and the challenges of blended learning.

The analysis was conducted through the identification of key themes, the theoretical synthesis, and the evaluation of the interrelationships among variables in modern ESP pedagogy. This approach allows the author to gain a comprehensive understanding of the direction of ESP development in the digital age.

RESULTS AND DISCUSSIONS

1. Teacher Immunity and the Psychological Wellbeing of ESP Teachers

The concept of teacher immunity was first introduced by Hiver (2017) as a psychological mechanism that helps teachers cope adaptively with professional stress. In the ESP context, teachers often face complex challenges, including the need for specialized materials, the use of digital technology, and high academic expectations.

Research shows that teacher immunity is influenced by various factors such as age, teaching experience, emotional regulation, happiness levels, and institutional support. Teachers with productive immunity tend to be more flexible, innovative, and resilient in the face of pedagogical changes. Conversely, maladaptive forms of this construct often manifest as resistance to innovation and avoidance behaviors, hindering teachers' professional development (Ismail & Nikpoo, 2023; Li et al., 2022).

According to Mercer and Gregersen (2020), teacher psychological wellbeing is closely related to the quality of language learning. Teachers with good emotional wellbeing are better able to create a supportive and communicative learning environment. In technology-based ESP

learning, teachers' mental preparedness is increasingly crucial, as they must master various digital platforms while maintaining high-quality interactions with students.

Furthermore, the COVID-19 pandemic has shown that many teachers are experiencing stress due to the sudden transition to online learning. This situation underscores that digital transformation cannot succeed without adequate psychological support and professional training for teachers.

2. Data-Driven Learning (DDL) and the "6 Is" Model

The development of corpus linguistics has significantly contributed to innovation in ESP methodology. One popular approach is Data-Driven Learning (DDL), a method that explores authentic language data using digital corpora.

DDL positions students as active learners who independently discover linguistic patterns through observing real-world examples of language use. This approach differs from traditional teacher-centered methods. Johns (1991) refers to students in DDL as "language detectives" because they are trained to inductively identify grammatical patterns, collocations, and rhetorical structures.

One emerging DDL training model is the "6 Is" model, which consists of:

- a. Introduction – introduction to the concept and objectives of corpus learning
- b. Illustration – demonstration of the use of corpus data
- c. Interaction – student interaction with language data
- . d. Induction – independent discovery of language patterns
- e. Intervention – guidance and clarification from the teacher
- f. Integration – application of learning outcomes in real-life contexts

This model helps ESP teachers systematically integrate corpora into their learning. The use of DDL has been shown to improve students' linguistic awareness, academic writing skills, and understanding of professional registers.

In the ESP context, DDL is particularly relevant because students need exposure to authentic language relevant to their specific fields, such as business, agriculture, health, or engineering. Corpora enable students to understand technical terms, professional communication patterns, and rhetorical structures commonly used in specific disciplines through a learner-centered approach, in which they act as researchers to independently explore language use in real-life contexts (Boulton, 2012; Yan, 2022).

However, implementing DDL still faces challenges, particularly regarding teachers' digital literacy and access to technology. Many ESP teachers lack adequate training in the effective use

of corpus tools. Therefore, corpus-based pedagogical training is an urgent need in modern language education.

3. Integration of Artificial Intelligence (AI) in ESP Learning

Advances in Artificial Intelligence have opened up new opportunities in ESP teaching. The presence of generative AI such as ChatGPT allows students to receive instant feedback, personalized language practice, and automated assistance with academic writing.

In the context of ESP, AI plays a crucial role in enhancing learner autonomy. Students can use AI to evaluate grammar, improve sentence structure, develop writing ideas, and even simulate professional communication in specific fields.

Recent research has shown that AI is highly effective in improving rule-based writing skills, such as grammar, vocabulary, formatting, and organization. However, research by Zhai et al. (2024) highlights that overreliance on AI can reduce students' ability to analyze information and construct arguments independently. However, AI still has limitations in high-level abstract aspects such as cohesion of ideas, critical argumentation, and rhetorical clarity.

Furthermore, the use of AI in ESP also helps students access more flexible and individualized learning. AI-based platforms can adapt materials to students' ability levels, making the learning process more adaptive.

Despite its many advantages, the use of AI raises several ethical and pedagogical issues. Over-reliance on AI can diminish students' critical thinking skills. Furthermore, concerns have arisen regarding plagiarism, the validity of information, and the reduction of human interaction in learning.

Therefore, AI should be positioned as a supporting tool, not a replacement for teachers' roles. Teachers still play a key role in providing in-depth feedback, building motivation, and creating emotional connections with students.

4. Social Challenges in Blended Learning in ESP

Blended learning has become a dominant approach in modern education because it combines face-to-face and online learning. In ESP, blended learning offers high flexibility and access to a variety of digital learning resources.

However, various studies have shown that the main challenges of blended learning are not merely technical, but also social and motivational. Students often struggle to maintain motivation in an online environment with minimal social interaction.

The lack of direct communication with lecturers and peers can lead to feelings of academic isolation. Furthermore, students face difficulties managing time, maintaining self-study discipline, and maintaining focus during online learning.

In the context of ESP, these challenges are further complicated because language learning relies heavily on communication interactions. Speaking, negotiation, and collaborative learning activities often fail to function optimally in online environments.

Research also shows that teacher emotional support remains a crucial factor in blended learning. Given that teachers' active presence can enhance students' emotional and cognitive connectedness, this role is crucial, especially for fostering a supportive learning environment (Heilporn et al., 2021; Syarif, 2013).

Students tend to be more motivated when instructors provide personalized feedback, appreciation, and positive social interactions.

Therefore, implementing blended learning in ESP requires a pedagogical design that balances synchronous and asynchronous activities. Teachers must be able to utilize technology without eliminating the human dimension of the learning process.

CONCLUSION

The transformation of ESP pedagogy in the digital era demonstrates that successful learning is determined not only by technological sophistication but also by the harmonious integration of digital innovation and human support. The psychological wellbeing of teachers, through the concept of teacher immunity, is a crucial foundation for navigating technology-driven pedagogical changes. Resilient and adaptive teachers are better able to implement learning innovations effectively.

Furthermore, corpus-based methodologies such as Data-Driven Learning and the "6 Is" model provide an inductive approach that enhances ESP students' linguistic awareness. AI integrations such as ChatGPT have also been shown to enhance learner autonomy and rule-based writing skills. However, blended learning still faces social challenges such as low motivation, academic isolation, and limited emotional interaction. Therefore, the future of ESP pedagogy requires a balance between digital technology, teacher psychological support, and meaningful human interaction.

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