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Presentation Title :

Designing for Needs, Delivering through UX: A New Approach to ESP E-Learning

Abstract

Needs analysis constitutes a cornerstone of English for Specific Purposes (ESP), as it informs the development of syllabi, materials, and instructional practices tailored to learners' academic and professional demands. However, in e-learning environments, where the process is mediated through digital platforms, the effectiveness of such needs-based design depends not only on content relevance but also on the quality of user interaction with the platform. Thus, the present study sheds light on the role of user experience (UX) design in shaping the alignment between learners' needs and ESP e-learning platforms. This research supports educators and ESP practitioners in leveraging UX design to better meet learners' needs in digital learning platforms.

1-Introduction

In the field of English for Specific Purposes (ESP), needs analysis is widely recognized as the foundation of course design. It enables educators to identify learners' academic and professional requirements and to develop courses that respond to those specific needs. Traditional ESP approaches have therefore focused primarily on identifying what learners need to learn in relation to their academic or professional contexts.

However, with the growing shift toward digital learning environments, a new dimension has emerged. When ESP courses are delivered through e-learning platforms, identifying learner needs alone is no longer sufficient.

The effectiveness of ESP instruction now depends not only on what is taught, but also on how learners interact with the digital environment through which it is delivered.

This raises important questions:

- How are learner needs delivered through the platform?
- How do learners experience this delivery?
- To what extent does the platform facilitate or hinder learning?

These questions highlight the importance of User Experience (UX) in digital learning environments.

User Experience (UX) refers to the overall quality of interaction between users and digital systems. In e-learning environments, UX includes usability, navigation, organization of content, accessibility, readability, feedback mechanisms, and the cognitive effort required to interact with the platform. In educational contexts, UX shapes how learners access, process, and engage with content. Therefore, even highly relevant materials may become ineffective if the learning experience itself is poorly designed.

Despite the central role of needs analysis in ESP, many digital platforms still fail to provide effective learning experiences. Courses may contain relevant disciplinary content, yet learners often face difficulties related to navigation, information overload, unclear task progression, and poor interface design. Consequently, a gap emerges between intended relevance and actual learning effectiveness.

The present study argues that needs analysis in ESP should be extended to include UX considerations, particularly in digital learning environments where the platform itself becomes part of the learning process.

2-Research Aim and Questions

The study aims to investigate the alignment between learners' identified needs and their actual experience within an ESP e-learning platform.

More specifically, the study addresses the following research questions:

1. To what extent does the platform address learners' academic needs?
2. How do learners perceive the usability of the platform?
3. How do usability and cognitive load influence learning effectiveness?

3-Methodology

A mixed-methods case study design was adopted. The study was conducted on the official Algerian e-learning platform used for delivering an English for Medical Purposes (EMP) course. Participants consisted of first-year medical students studying within an English-Medium Instruction (EMI) environment.

Data were collected through two main instruments. First, a structured questionnaire was administered to assess learners' perceptions regarding needs alignment, usability, cognitive load, accessibility, and learning effectiveness. Second, task-based observations were conducted to examine how learners interacted with the platform while completing specific learning tasks.

The combination of quantitative and qualitative data allowed for a deeper understanding of both learners' perceptions and their actual interaction experiences within the platform.

4-Results :

4-1 Questionnaire Findings: Learner Needs

The findings revealed only partial alignment between the course and learners' needs. While students moderately agreed that the course helped them understand medical terminology ($M = 3.60$) and develop reading skills for medical texts ($M = 3.72$), lower scores appeared in more communicative and practical dimensions.

For example, preparation for academic and clinical communication scored negatively ($M = 2.44$), overall course expectations were not fully met ($M = 2.76$), and most importantly, learners strongly reported that they were not consulted about their needs during course design ($M = 1.64$).

These findings suggest that needs analysis was either limited or insufficiently operationalized in practice.

4-2 Platform Usability Findings

The platform presented several usability challenges that negatively affected learner interaction. Students reported difficulty navigating the interface ($M = 2.32$), unclear organization of materials ($M = 2.32$), poor readability and visual design ($M = 2.40$), and unclear task instructions ($M = 2.04$).

Although students positively evaluated technical accessibility across devices ($M = 3.76$) and platform loading speed ($M = 3.40$), the overall usability experience remained below satisfactory levels.

These findings indicate that technical functionality alone does not guarantee effective learning interaction.

4-3 Cognitive Load Findings

One of the strongest findings relates to cognitive overload. Students reported high mental overload while using the platform (M = 3.92), excessive complexity distracting them from learning (M = 4.12), difficulty managing the amount of information presented on screen (M = 2.20), and limited support for concentration and focus (M = 2.12).

These results indicate that the learning experience imposed significant cognitive demands on learners, reducing the effectiveness of content engagement.

4-5 UX Design and Accessibility Findings

The UX dimension produced particularly important findings. Students believed that interface improvements would motivate them to use the platform more frequently (M = 4.44), and that better-designed platforms would help them achieve their learning goals more effectively (M = 4.52).

However, they negatively evaluated learner engagement in the current design (M = 2.28), feedback mechanisms (M = 2.28), and the overall impact of UX on learning outcomes (M = 2.68).

These findings demonstrate strong learner awareness of the importance of UX in shaping learning effectiveness.

4-6 Task-Based Observation

Task-based observations were conducted to examine how learners interacted with the platform while completing specific tasks. The observations revealed several usability issues, including difficulty locating materials, unclear task progression, hesitation during navigation, and signs of cognitive overload when dealing with dense content.

Learners frequently relied on trial-and-error navigation, suggesting limited interface intuitiveness.

These findings supported the questionnaire results and confirmed that usability challenges directly affected learners' ability to engage effectively with the platform.

5-Discussion

The findings reveal a clear mismatch between content relevance and learning experience. Although some aspects of the content align with learners' academic needs, poor usability and high cognitive load prevent learners from fully benefiting from the course.

This suggests that the issue is not only what learners need to learn, but also how these needs are delivered and experienced through the platform. Therefore, in digital ESP environments, UX becomes a mediating layer between content design and learning outcomes.

The findings also demonstrate that needs analysis in e-learning platforms should go beyond identifying learners' linguistic or academic needs. It should additionally consider learners as users of the digital environment itself. In other words, students are not only language learners; they are also users interacting with interfaces, navigation systems, multimedia content, and digital tasks.

This adds another dimension to needs analysis that is often overlooked in traditional ESP course design.

Needs analysis in e-learning environments should therefore investigate questions such as:

- How do learners navigate the platform?
- Which features help or hinder learning?
- What type of content presentation do learners prefer?
- How much cognitive load does the interface create?
- Which interactive elements increase engagement?
- What digital challenges do learners face?
- How do learners emotionally experience the platform?

From this perspective, needs analysis becomes multidimensional. It combines:

- linguistic needs,
- academic or professional needs,
- technological needs,
- and experiential or usability-related needs.

This approach aligns closely with UX design principles, where the objective is not only to deliver content but also to create meaningful, efficient, and engaging learning experiences. In ESP e-learning environments

especially, the platform itself becomes part of the learning process. Poor UX can negatively affect motivation, participation, comprehension, and even learning outcomes.

6-Proposed UX-Informed Framework

A possible way to conceptualize this approach is to view e-learning needs analysis through two interconnected dimensions:

Learning Needs

This dimension focuses on:

- language skills,
- academic tasks,
- professional communication,
- and course objectives.

User Experience Needs

This dimension focuses on:

- usability,
- accessibility,
- interaction design,
- navigation,
- engagement,
- cognitive comfort,
- and digital learning behaviors.

The intersection between these two dimensions is where effective ESP e-learning design can emerge.

7-Implications

The findings suggest that effective ESP e-learning requires more than relevant content. Digital platforms should also provide a clear, usable, and learner-centered experience.

For ESP practitioners, this means that needs analysis should include UX considerations such as usability, accessibility, navigation, and cognitive load.

The study also emphasizes the importance of collaboration between ESP practitioners and UX designers. While ESP specialists identify learners' academic and linguistic needs, UX designers help ensure that these needs are effectively delivered through the digital learning experience.

Ultimately, learning effectiveness in ESP e-learning depends not only on what learners study, but also on how they experience the learning process.

8-Limitations

This study has several limitations. First, it was conducted on a single ESP e-learning platform within one institutional context, which may limit the generalizability of the findings. Second, the sample size was relatively small and focused only on medical students. Third, the study relied mainly on self-reported perceptions and short-term observations.

Future research could include larger samples, comparative studies across different ESP platforms, and deeper investigation of UX design practices in digital language learning environments.

9-Conclusion

This study demonstrates that needs analysis alone is insufficient in ESP e-learning environments. Even when content appears relevant, learners may struggle due to poor usability and cognitive overload. User experience therefore plays a central role in determining whether learners can effectively engage with and benefit from instructional content.

The study ultimately argues that needs analysis in ESP should be extended to include UX considerations, ensuring that learner needs are not only identified, but also effectively delivered through the learning experience itself.

References

- Basturkmen, H. (2020). *Developing courses in English for specific purposes*. Palgrave Macmillan.
- Dudley-Evans, T., & St John, M. J. (1998). *Developments in ESP*. Cambridge University Press.

Hassenzahl, M. (2010). Experience design. Morgan & Claypool.
<https://doi.org/10.2200/S00261ED1V01Y201003HCI008>

Hutchinson, T., & Waters, A. (1987). English for specific purposes. Cambridge University Press.

Martin, F., et al. (2020). Online teaching and learning review. Computers & Education, 159, 104009.
<https://doi.org/10.1016/j.compedu.2020.104009>

Norman, D. A. (2013). The design of everyday things. Basic Books.

Sweller, J., Ayres, P., & Kalyuga, S. (2011). Cognitive load theory. Springer.
<https://doi.org/10.1007/978-1-4419-8126-4>