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Research Article

Tailoring English for pharmaceutical purposes: Insights from a needs analysis

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Developing an English for Specific Purposes [ESP] course necessitates a focused approach during the needs analysis phase, as it aims to address the specific language skills required by a particular community of practice. This study conducted a targeted needs analysis to support the development of an English for Pharmaceutical Purposes [EPP] course within an EFL context. As a part of an action research project, the researchers identified learning outcomes derived from this preliminary phase of ESP course design. To achieve this, semi-structured interviews were conducted with faculty members at a pharmacy faculty, alongside a document analysis of existing EPP syllabi from Turkish universities and pharmacy-specific English coursebooks. The findings from interviews reveal that, given the EFL context, certain English for Academic Purposes [EAP] skills are critical in addition to the language competencies needed for pharmaceutical contexts such as pharmacy stores, pharmaceutical companies, international collaborations, international hospitals, and pharmaceutical laboratories. Additionally, the context-driven learning outcomes identified through document analysis can assist ESP practitioners in selecting domain-specific topics and tasks for EPP syllabus design, while also integrating them with interview-based learning outcomes. Recognizing the context-specific nature of ESP, the proposed learning outcomes aim to provide ESP practitioners with a practical framework for designing tailored courses.

Keywords: English for specific purposes, needs analysis, pharmaceutical English

1. Introduction

The issue of teaching English for specific purposes [ESP] has been a longstanding debate in English language teaching [ELT] field. While content experts possess valuable domain-specific knowledge, they often lack expertise in teaching English as a foreign [EFL] or second language [ESL], which extends beyond introducing terminology and translating texts. Conversely, English teachers excel in language instruction but may often lack content knowledge. However, over time, a consensus has emerged favouring English teachers for occupational English courses due to their proven success in teaching practices compared to content experts (e.g. Alkol & Deniz, 2024; Aliyasin & Pouyan, 2014; Enesi et al., 2021; Maleki, 2008; Miller, 2001; Mousavi et al., 2019; Rajabi et al., 2011).

Beyond merely delivering instruction, an ESP teacher is referred to as an ESP practitioner and assumes the five key roles of a teacher (designing targeted learning experiences with effective methods), a researcher (performing a needs analysis to identify learners' goals, target needs, and required language skills while sourcing genre-specific content), a course designer and material provider (defining ESP course outcomes based on needs analysis, structuring the syllabus accordingly, and adapting or developing course materials), a collaborator (working with subject specialists to acquire field-specific knowledge, necessary language skills, and relevant media for the context), and an evaluator (assessing teaching methods, course materials, and learning outcomes throughout the course) as identified by Dudley-Evans and St. John (1998). Correspondingly, a needs-based course helps ESP teachers create relevant learning outcomes, motivating learners to engage with discipline-specific content and skills. This leads to improved

motivation and learners mastering occupation-specific knowledge and skills in English according to the norms of their target community.

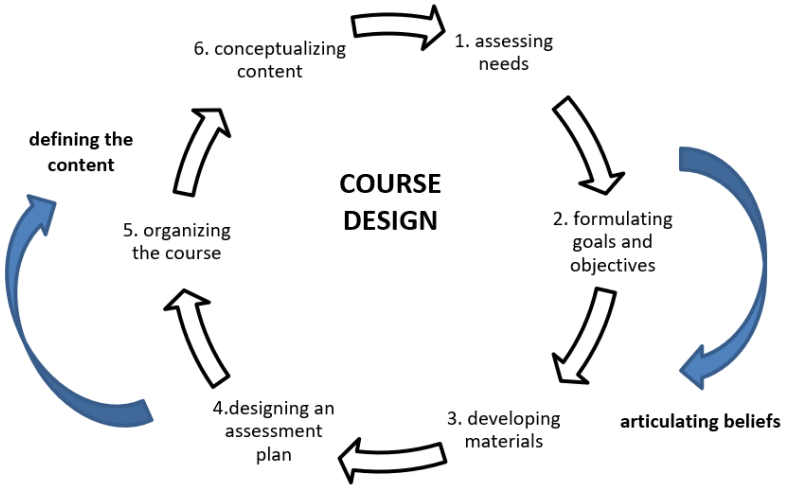
However, ESP course design process becomes more complex in EFL environments, where learners have fewer opportunities to use English outside the classroom and access occupation-specific materials when compared to ESL settings. Consequently, ESP courses in EFL contexts often replicate ESL environments to compensate for limited real-world practice (García Laborda & Litzler, 2015). In EFL contexts, tasks are often limited by time, and learners have restricted access to authentic materials (Iswati & Triastuti, 2021). As a result, ESP practitioners face the challenge of creating realistic learning environments to help students practice occupational English and engage with relevant professional texts. Moreover, when ELT coursebooks fail to address specific ESP domains, the responsibility for creating occupation-specific content and materials falls on ESP practitioners (Lenard & Lenard, 2018; Syarifah, 2017). In such cases, ESP practitioners are supposed to design courses and develop materials to equip learners with the necessary English proficiency for their profession.

1.1. Literature Review

1.1.1. Needs Analysis

Designing an ESP course starts with a needs analysis of the learners. Brown (1995) outlines key steps in course development as follows: needs analysis, formulating goals and objectives, [syllabus design] (Richards, 2001), teaching, materials selection and development, assessment, and program evaluation, as depicted in Figure 1.

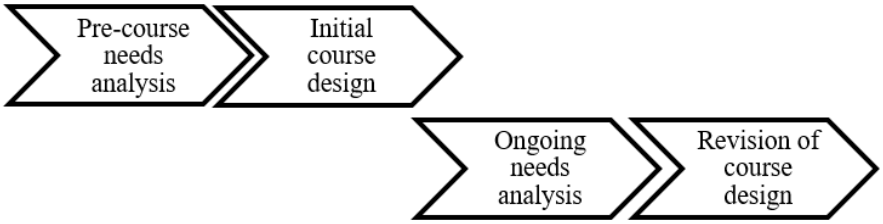
Figure 1
The outline of course design procedures (Graves, 2000)



ESP syllabus design starts with a needs analysis, followed by generating learning outcomes, which guide instruction, materials, and assessment. However, the process is not linear; revisions may be necessary as new information arises. Graves (2000) proposes a flowchart model where stages like 'defining the context' and 'articulating beliefs' form the foundation for other processes. This model emphasizes a systems approach, showing that changes in one area (e.g., goals or materials) affect others, such as course content and teaching purposes.

Basturkmen (2010) emphasizes that ESP focuses on improving specific language skills in particular contexts. Determining course content involves identifying the language skills learners need, and using these findings to assess learning outcomes. This process, known as needs analysis, was once viewed as a simple pre-course step focused on target situations but has since evolved to encompass various contextual perspectives. Basturkmen (2010) further highlights that needs analysis also helps to enhance and assess ongoing ESP courses, allowing for necessary adjustments to be made in real time, as illustrated in Figure 2.

Figure 2
The function of needs analysis in instructional design (Basturkmen, 2010)



Basturkmen (2010) outlines the needs analysis process as a key course development step, starting with identifying target language skills and tasks for vocational or academic settings, considering learners' current proficiency and the strengths and weaknesses of the teaching environment. The gathered information helps shape and improve the content and methods of the ESP course.

Trace et al. (2015) state that ESP courses are shaped by various needs, including those of learners, the community, the language program, and other factors. To identify these needs, Richards (2001) suggests consulting the target population, such as policymakers, teachers, students, and employers, as they offer valuable insights. Needs analysis should reflect both objective data and the subjective perspectives of stakeholders. Triangular approach is recommended to gather information from multiple sources to form a comprehensive understanding. Common methods include meetings, questionnaires, interviews, observations (Richards, 2001), genre analysis of spoken and written discourse of the target community, case studies, course materials, including syllabi and handouts, books, journal articles or reports, analysis of learners' language samples, and job-shadowing, among others (Basturkmen, 2010).

Finally, Richards (2001) notes that while all information from a needs analysis can be useful, prioritizing needs is essential, as it is impractical to address all of them within a limited course time frame. He also advises consulting with stakeholders to align the ESP syllabus content with their perspectives, ensuring relevance and suitability of the learning outcomes emerged.

1.1.2. Studies Related to Teaching English for Pharmaceutical Purposes

ESP studies differ significantly between ESL and EFL settings due to variations in context and purpose (Johns & Price, 2014). García Laborda and Litzler (2015) highlight key differences in delivering ESP courses in these settings. In EFL countries, the general low proficiency in English often leads to integrating some ESP content with English for General Purposes [EGP], such as teaching verb tenses alongside occupation-related scenarios like meetings. This makes ESP tasks more language-focused compared to advanced ESL classes. In ESL contexts, ESP courses focus on immediate job- or academic-related skills in English, whereas in EFL settings, learners need English for international professional requirements. Therefore, ESP courses in EFL settings must incorporate cultural and global English uses. García Laborda and Litzler (2015) note that learners in EFL settings lack opportunities to practice English outside the classroom, which impacts their learning. Additionally, while ESP courses in ESL settings offer more authentic practice, EFL courses often replicate these experiences to compensate for limited real-world exposure. Despite time constraints and limited access to authentic materials in EFL contexts, the increased availability of online resources has improved access to real-life materials, shifting focus from linguistic structures to practical language skills, though.

Similarly, within the scope of this research, differences in ESP course design for pharmacy professionals and students are examined, focusing on the syllabus content in ESL and EFL contexts. In ESL settings, where participants live, work, or study in English-speaking countries, the course content differs from that in EFL countries, where learners are prepared for international pharmaceutical communication. The following examples outline ESP course designs for pharmaceutical purposes, first in ESL settings, then in EFL contexts, presented chronologically.

One of the earliest examples of ESP course design for ESL pharmacy students was Graham and Beardsley's (1986) team-teaching course at Maryland University. The course, aimed at improving oral communication in pharmacy settings, was taught by a pharmacist and an ESL specialist. It was based on a needs analysis, including student input, pharmacy expertise, and resources from pharmaceutical companies. The syllabus focused on speech functions for pharmacists, supported by role-plays, videos, and vocabulary development related to pharmacy terminology. Extralinguistic behaviours and some grammars were also integrated. The study highlighted the successful collaboration between ESL and pharmacy professionals in course design and implementation. While the course could be taught by an ESL instructor alone, close collaboration with a content expert is essential for effective ESP teaching.

In Australia, Kokkinn and Stupans (2011) developed a curriculum for extracurricular English classes for pharmacy students, in collaboration with content experts. They conducted a needs analysis to identify communication needs in the Australian context by reviewing course books and analysing workplace language in pharmacy *counselling*. Using an interactional sociolinguistic approach, they observed 15 simulated pharmacist-patient interactions to identify key learning outcomes, including adapting to Australian language variation, using appropriate terminology, and applying politeness strategies. Their study emphasized the importance of collaboration between language and pharmacy experts and recommended extracurricular activities to address the specific language needs of pharmacy students.

Similarly, Berardo (2017) conducted a study to help learners who learn English as an additional language [EAL] improve the intelligibility of their spoken English in a community pharmacy setting. He focused on enhancing communication skills, particularly pronunciation, which often caused miscommunication. The course addressed key tasks like greeting patients, explaining treatments, and checking comprehension. As a pilot study, a single learner practiced pronunciation concepts in class and recorded them as homework. By the end of the course, the learner improved her speech and grammar. Based on his findings, Berardo (2017) recommended teaching pronunciation, vocabulary, grammar, listening comprehension, and cross-cultural communication for an ESP pharmacy syllabus.

In a different study in Australia, Hussin (2013) used reflective strategies in stimulated recall interviews with 20 Malaysian EAL pharmacy students to identify issues in their pharmacist-patient simulations, which led to changes in ESP course design. The students, acting as pharmacists, practiced with pharmacy staff playing patients. Data was collected through video reflections, staff feedback, and focus-group interviews a year later. The analysis revealed that students often used indirectness in giving advice due to language challenges, cultural attitudes, and teaching-induced errors. Hussin (2013) recommended using reflective techniques like journals and video data to teach directness in professional communication and emphasized the importance of ESP practitioners collaborating with content experts to address language needs.

In addition to syllabus design, corpus-driven research has also been conducted for ESP courses for pharmacy students in ESL settings. For example, Diaz-Gilbert (2004) conducted surveys with 25 pharmacy students at the University of the Sciences in Philadelphia to assess their knowledge of pharmacy-related vocabulary. The results showed that students struggled with both recognizing words in isolation and in context, often confusing similar-sounding or similarly written words. Diaz-Gilbert (2004) suggested incorporating vocabulary-building activities into the curriculum and collaborating with ESL instructors and pharmacy professionals to address these issues, alongside teaching pronunciation and spelling. In her book *English for Pharmacy Writing and Oral Communication,* Diaz-Gilbert (2008) focuses on teaching pharmacy-related vocabulary through dialogues and writing tasks organized around medical themes. The book covers both written and oral skills, with exercises in medical terminology, comprehension, and pronunciation, and includes online resources for practice. It is considered one of the most comprehensive and accessible ESP coursebooks for pharmacy students.

In a corpus-driven study, Grabowski (2013) analysed the vocabulary, phraseology, and lexical patterns in two pharmaceutical texts: patient information leaflets [PILs] and summaries of product

characteristics [SPCs]. The study found that PILs primarily use keywords related to pharmaceutical forms and advisory language, while SPCs focus on chemical substances, medical conditions, side effects, and measurements. Additionally, PILs tend to use stance bundles (e.g., obligation), while SPCs feature referential bundles (e.g., identification) and discourse bundles (e.g., clarification). These differences are linked to the functional and situational features of each text type. Grabowski (2013) suggests applying these findings in ESP course design and translator training.

As seen in the examples above, in ESL settings, ESP courses for pharmacy students often follow a team-teaching approach, where content experts collaborate with ESL instructors to teach pharmacy skills and address immediate communication needs. This method leverages extracurricular activities to enhance listening and communication skills in real-world pharmacy interactions. In contrast, EFL learners have fewer opportunities for such practice outside of class, relying mostly on simulated scenarios. However, EFL instructors can adopt the team-teaching model by involving pharmacists and faculty in class or using real pharmacy environments for more authentic simulations. Creating immersive learning experiences like ESL contexts can help EFL students develop discipline-specific communication skills.

As for the studies conducted in EFL settings, in their study on ESP for pharmacy in Spain, Mayo et al. (1995) conducted a needs analysis through interviews with pharmacy specialists and a questionnaire for students. The results revealed that specialists emphasized improving reading and writing skills for understanding and producing technical texts, while students highlighted the need for better listening and speaking skills for international lab work. Based on these findings, the researchers designed a four-skills syllabus, with a focus on reading and writing, incorporating a content-based approach and genre skills to meet the demands of pharmaceutical discourse. They proposed combining content-based, skills-based, and a weak task-based syllabus due to large class sizes.

In the South African multilingual setting, Van de Poel et al. (2015) developed a Language for specific purposes [LSP] course for pharmacists in South Africa through a needs analysis with 255 participants. The study identified barriers to effective pharmacist-patient communication, guiding the creation of a course tailored to the five common languages of South Africa (English, Afrikaans, isiZulu, isiXhosa, and Setswana). Given the limited time available for face-to-face instruction, the course was designed for blended learning, combining online practice on the "Communication for Professionals-Pharmacists" platform with in-person teaching. The syllabus focused on 10 communicative functions in clinical settings, with learners aiming for 80% accuracy in using the target language. The online platform offered exercises, feedback, and remedial training, making it a comprehensive model for ESP course design in pharmacy education.

Dewi and Chakim (2017) detail the needs analysis and syllabus modifications for an ESP course developed for pharmacy students in an Indonesian vocational high school. The researchers conducted a needs analysis with teachers and students to determine what should be included in the ESP materials and to adapt the existing 2013 pharmacy syllabus, which was originally an EGP course. The developed materials covered all four skills and pharmacy-related content on illness and medical treatment. The course followed a "scientific approach," involving steps like warming up, observing, questioning, and reflection. Authentic materials, simple texts, and dialogues were used in teaching, with activities including vocabulary translation, writing, and pronunciation practice. After implementation, the course instructor responded positively to the modified materials. This study offers a valuable example for ESP practitioners looking to conduct needs analyses and adapt existing course content.

In Saudi Arabia, Khan (2017) conducted a study to evaluate the effectiveness of existing pharmacy-based ESP syllabuses, course materials, and teaching methods from the perspective of ESP teachers. A questionnaire was administered to 41 ESP teachers with experience teaching pharmacy students. The study found a need for curriculum changes to address the pedagogical and professional needs of learners, as well as for better-trained ESP teachers in specific disciplines.

Although the study lacks empirical findings, it provides insights into the challenges of implementing ESP courses for pharmacy students in EFL settings

Kobayashi et al. (2018) developed an English program and manual for senior Japanese pharmacy students, aimed at meeting the standards of the Objective Structured Clinical Examination [OSCE] set by the Association of Pharmaceutical Students in Japan. The program, based on a survey of local pharmacists in East Japan, focused on common health issues like fever, pain, and nausea/vomiting that foreigners typically seek pharmacy advice for. The researchers created finger-point and phrase booklets for pharmacy counselling, identifying key course objectives: greeting patients, conducting interviews, and concluding interactions. A trial with final-year pharmacy students was conducted, where students practiced with simulated foreign patients. The results showed that students found the booklets helpful for communicating with foreigners, and the use of visuals in the counselling process proved effective. This approach may benefit EFL learners with limited real-life exposure to foreign patients and could serve as supplementary material in ESP courses.

Woźniak and Acebes de la Arada (2018) describe an ESP course for pharmacy students in Spain, taught within a Content and Language Integrated Learning [CLIL] program where English is the medium of instruction. Unlike typical ESP courses in EFL settings, this course blends both ESP and English for Academic Purposes elements, requiring collaboration between content and ESP instructors. To assess the needs of the CLIL program, the researchers interviewed content lecturers to balance language and content instruction. The course focused on both chemistry and pharmaceutical care, with topics such as lab safety, herbal medicine, and pharmaceutical care. Authentic materials were used instead of commercial textbooks, and tasks included chemistry-related experiments and pharmacy consultations. Students created audio and video recordings for patient consultations and dialogues, practicing pharmaceutical vocabulary and communication skills. The study highlighted the importance of a language-focused ESP course and the complementary nature of ESP and CLIL, emphasizing the challenge of balancing language skills with pharmacy content.

Different from the previous studies, Heidari et al. (2020) conducted a corpus-based lexical study that outlines the creation of the Pharmacy Academic Word List [PAWL], derived from a corpus of 3,458,445 tokens compiled from 800 contemporary pharmacy texts, including research articles, review articles, and short communications across four pharmacy sub-disciplines. Words were analysed based on criteria such as frequency, range, dispersion, and specialized usage. The results of this study highlight the importance of creating specialized academic word lists tailored to meet the needs of non-native researchers and postgraduate students across different fields. Such a word list could serve as a foundation for developing an EAP-focused lexical syllabus to guide language learning and teaching objectives.

Examining ESP studies conducted in pharmacy settings, a common feature in English for Pharmaceutical Purposes [EPP] course design in both ESL and EFL contexts is the use of simulations, as these courses focus on practicing work-related communication skills for both professionals and pre-professionals. In addition, role-plays, case studies, and project work are commonly employed teaching methods in EPP courses, as highlighted by Robinson (1991). These methods are particularly relevant in disciplines such as pharmacy, law, and medicine, where professional practice revolves around specific patient or client cases. Consequently, ESP courses often adopt task-based teaching methodologies, as they focus on developing professional communication skills for both immediate and future target contexts, which aligns with the objectives of ESP studies designed for pharmaceutical purposes. On the other hand, it is observed that in EPP courses in EFL countries, the approach is more language-based, emphasizing language structures, vocabulary, and pronunciation along with activities to enhance pharmacy-related communication skills. This is due to EFL learners' lower English proficiency compared to ESL learners. Therefore, as noted by Belcher (2009), hybrid courses combining EAP and English for Occupational Purposes [EOP] skills are more common in EFL settings, reflecting the academic and language needs of pharmacy students.

Simlarly, in the EFL setting of the current study, the first author, referred to as "the teacher-researcher" throughout the article, encountered several challenges while teaching the EOP course at a pharmacy faculty; namely, limited opportunities for students to practice pharmaceutical communication skills outside the classroom, a lack of authentic EOP materials tailored to the students' language proficiency and contextual needs, and the diverse English proficiency levels among learners to complete pharmaceutical tasks in English. To address these challenges, the teacher-researcher aimed at designing a hybrid EOP-EAP course to balance professional content with the necessary language instruction for the students, which led to the development of an English for Academic Pharmaceutical Purposes [EAPP] course, as recommended by Belcher (2009).

With the stated objective, this study draws from a part of the doctoral dissertation of the first author (İlter, 2020) under the supervision of the second author, which aimed to carry out an action research study in collaboration with learners, faculty members, and English instructors at a pharmacy faculty. The goal was to develop a syllabus for teaching EAPP in a flipped learning environment. Within the limited scope of this article, however, the emphasis is placed on the needs analysis phase of ESP course design due to its significance in identifying the specific linguistic and professional requirements of learners, ensuring that the syllabus aligns with their academic and occupational goals, and providing a foundation for a tailored and effective EAPP course design.

It is worthy to note that ESP course design in higher education requires the involvement of all stakeholders in the decision-making process over the long term (Ghezali, 2021). Without such collaboration, English lecturers may struggle to deliver content effectively due to a lack of specialized subject knowledge, reducing the practicality of teaching occupational tasks in English. Conversely, content experts or faculty members may lack expertise in English instruction, often turning ESP courses into translation-focused classes dominated by grammar and translation activities. To ensure effective outcomes, English lecturers and content experts should work together to develop learning objectives tailored to using English for pharmaceutical contexts. This collaboration should also consider the overall structure of the program and the role of English courses in the curriculum. Thus, to achieve the purpose of the study, the teacher-researcher followed the main principle of backward design (Wiggins & McTighe, 2005) for lesson planning, and relied on the faculty members' responses to the leading research questions below, which were the focus of the needs analysis phase and helped the researchers to analyse the data accordingly:

RQ 1) Which context-driven tasks are needed for English for pharmaceutical purposes?

RQ 1a) In which pharmaceutical contexts is English required?

RQ 1b) Which language skills are necessary in these pharmaceutical contexts?

Within this scope, the current study seeks to address the identified research questions by thoroughly examining semi-structured interviews with faculty members and a review of existing syllabi and coursebooks for teaching English in the field of pharmacy. The subsequent sections provide an in-depth presentation of the study's methodology, findings, and discussion.

2. Method

2.1. Research Design

To fulfil the objective of creating an EAPP syllabus tailored for pharmacy students, this study was structured as first-person (Reason & Bradbury, 2008) and practical (Creswell, 2005) action research. According to McNiff et al. (1996), the goal of first-person/practical action research is to transform one's thoughts, actions, and attitudes toward a specific issue, thereby enhancing professional practices within this area of influence. As for the current study, the teacher-researcher felt the need to design an EAPP syllabus for pharmacy students and fulfilled this intention by engaging in action research with the stakeholders in the context. Since the focus is on practical application rather than definitive outcomes, the action research is also intended as a model for other ESP practitioners, enabling them to integrate reflective thinking and adapt these insights to their own contexts. Aligned with these principles, this study emphasizes the needs analysis phase of EAPP course design, conducted as action research in collaboration with faculty members within the

study context. The outcomes of the needs analysis phase can be utilized by other ESP practitioners aiming to teach English for pharmaceutical purposes in tertiary-level settings.

2.2. Setting and Participants

This study was conducted in the context of the teacher-researcher's EOP course in the third year of study at the faculty of pharmacy of a medium-sized university in the eastern part of Türkiye. As the teaching context was an EFL environment, it was essential to develop a syllabus for students who needed EFL language support alongside occupational language skills. To design such a syllabus, the current study depicts the needs analysis phase of the ESP course design process handled in action research.

The participants of the current needs analysis study were 5 faculty members, who lectured at the faculty of pharmacy in the teacher-researcher's institution and were chosen to consult on their suggestions about pharmaceutical content of the EAPP syllabus in needs analysis phase. Two of the faculty members had a major in pharmacy, while the other three had majors in either chemistry or biology, which added multiple perspectives to the needs analysis. The selection of participants is based on criterion sampling, which is a subset of purposeful sampling strategies (Patton, 2002). Since the aim of the study is to design an EAPP syllabus for pharmacy students, faculty members at the faculty of pharmacy were purposively selected to meet the criteria for training pharmacy students.

2.3. Data Collection

In this needs analysis study, data triangulation was adopted to derive insights from different data sources, which complement one another, that is, when existing EOP syllabi were not sufficient to address the current needs of the learners, data gathered in semi-structured interviews was utilized to provide a more comprehensive understanding in generating learning outcomes for the syllabus, or vice versa. To serve for the research purpose, the teacher-researcher conducted the needs analysis via semi-structured interviews with faculty members; had a review of EOP syllabuses at Turkish pharmacy faculties and analysed the ESP course books for pharmaceutical purposes on the ESP market. A pool of learning outcomes was generated for the EAPP syllabus for undergraduate pharmacy students, relying on the data gathered.

2.3.1. Semi-structured interviews

McMillan and Schumacher (2006) recommend semi-structured interviews to collect data on participants' interpretation of a particular phenomenon, which allows researchers to investigate how participants understand and assign meaning to their experiences, thereby enhancing the comprehension of the topics being examined. Accordingly, to determine the English language needs of pharmacy students during their undergraduate study and over the course of their career as a pharmacist in any pharmaceutical sector, the faculty members were questioned regarding their views on what tasks their students should perform in English in their future careers, whether they encourage students to use English sources to support course content, if they had taken any EOP course at any stage of their own education, and if they did , they were also asked about the course content.

The teacher-researcher held semi-structured interviews with 5 faculty members at the faculty of pharmacy. Each interview, conducted with the participants' consent, lasted approximately 30 minutes and was documented using a smartphone's audio recording feature. The responses provided a foundation for identifying the learning outcomes for an English language user in pharmaceutical contexts.

2.3.2. The document analysis

To enrich the pool of learning outcomes, the teacher-researcher also conducted document analysis by reviewing the EOP syllabi in other Turkish pharmacy faculties and ESP course books for pharmacy students. As Merriam and Tisdell (2015) highlight, document analysis provides

researchers with access to data that would otherwise require significant time and effort to gather as well as supporting these data sources to achieve data triangulation. However, within the scope of the current study, access to coursebooks for English for pharmacy was almost impossible. In Türkiye, no specific EOP textbook existed for pharmacy students. Internationally, the teacher-researcher found three examples, but only one, *English for Pharmacy Writing and Oral Communication* by Diaz-Gilbert (2008), was accessible due to financial constraints. As for the EOP syllabi in other Turkish pharmacy faculties, the learning outcomes outlined in the course content packs were analysed by downloading the EOP materials available on university websites.

2.4. Data Analysis

The teacher-researcher followed Creswell's (2005) inductive data analysis model using NVivo 11 Pro software. The analysis process involved six steps: 1) Organizing data in NVivo; 2) Reviewing the data to identify meaningful units related to the research questions; 3) Coding the data with relevant labels; 4) Comparing coded texts for similarities and differences, and reorganizing overlapping codes as needed; 5) Generating categories and themes while excluding irrelevant data; and 6) Drawing conclusions by verifying patterns and inductively generating insights as the analysis progressed.

2.5. Trustworthiness of the Study

To achieve trustworthiness in this study, the following methods were employed: more precisely, to ensure credibility, the study utilized data triangulation, expert reviews, the researcher's self-reflection, and deviant case analysis; transferability was addressed through detailed and rich descriptions; dependability was established using data triangulation, expert reviews, the researcher's self-reflection, a research journal, achieving data saturation, and employing NVivo 11 Pro for data analysis; and finally, confirmability was ensured through the researcher's self-reflection, electronic data recording, and the use of low-inference descriptors in the presentation of findings.

3. Findings

The findings presented below primarily stem from semi-structured interviews with faculty members and the document analysis of EOP syllabi at pharmacy faculties in Türkiye and available ESP coursebooks. It is noteworthy that the needs analysis findings for the EAPP syllabus cannot be directly used in any ESP setting due to the unique nature of each ESP learning environment. Accordingly, the learning outcomes identified in this needs analysis study reflect the specific insights of the study participants within a Turkish EFL context as well as the researchers' interpretations of these results.

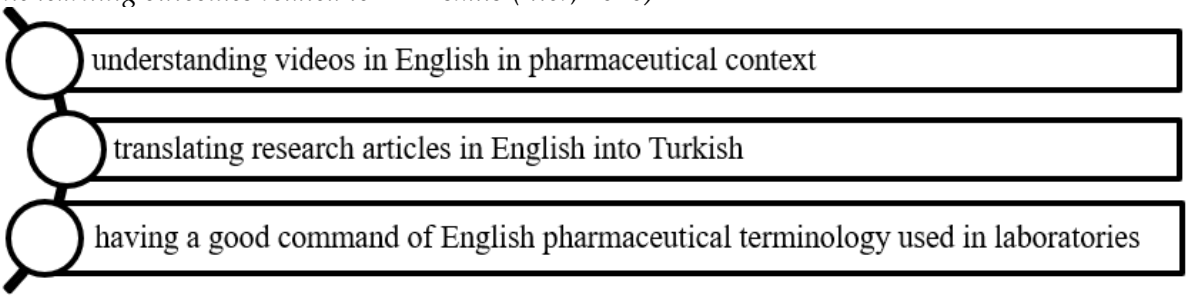
3.1. The Findings on Semi-structured Interviews with Faculty Members

The semi-structured interviews with five faculty members at the faculty of pharmacy provided the primary data for the EAPP syllabus needs analysis. The faculty members were asked about 1) their previous experiences with ESP courses as a student; 2) expectations from their students to use English academically; and 3) their perspectives on the benefits of graduating with strong English skills for professional contexts. The responses were analysed and presented here along with quotations under the headings of learning outcomes related to EAP skills and EOP skills to represent the academic and pharmaceutical dimensions of the EAPP syllabus design.

3.1.1. The learning outcomes related to EAP skills

Based on the data collected from the faculty members' responses to the first and second questions mentioned above, three key EAP skills were identified to include in the pool of learning outcomes as illustrated in Figure 3.

Figure 3
The learning outcomes related to EAP skills (İlter, 2020)



To determine whether pharmacy students are supposed to perform any EAP tasks during their study, the faculty members' previous experiences were considered. Accordingly, they were first asked about their experiences with ESP courses at the undergraduate and/or graduate level. Of the five faculty members, only one had studied a semester-long ESP course at the graduate level, which focused on legal protocols and general terminology in the field:

> Yes, I took an occupational English course for one semester. I learned the terminology of a professional protocol in my field. [Faculty Member 1]

Two of the other faculty members mentioned that they had taken EGP courses called "Occupational English" during their undergraduate studies:

> The courses were named occupational English courses, but the content was general English. The reading passages were adapted to pharmaceutical topics. In fact, the texts were mostly about medicine. [Faculty Member 3]

The remaining two faculty members stated that they did not take any ESP courses during their undergraduate or graduate education. This question aimed to explore whether any best practices for ESP courses existed and whether their experiences could offer insights into designing a course that meets pharmacy students' EAP needs. The overall responses revealed a lack of understanding and/or indifference regarding the importance of ESP courses in pharmaceutical education.

Second, it was important to know whether faculty members ask their students to carry out activities related to EAP skills so that some fundamental EAP skills may be added to the pool of learning outcomes. Thus, the faculty members were also asked about their expectations or demands from students to use English in their courses. Two faculty members mentioned that they do not require any assignments in English. The remaining three explained that they reference pharmaceutical sources in English and expect students to be familiar with international terminology and the academic literacy of their field. Faculty Member 4 illustrated this as follows:

> I do not translate [terms] into Turkish in my courses. […] Students should learn these terms unconsciously by hearing them in departmental courses and reading in their coursebooks. […] when I went abroad, or when I read a scientific article, I benefitted from using these words in English in our laboratories with my supervisor. […] Even if I did not have an advanced level of English proficiency, I understood the terminology at a conference. Therefore, I try to make my students become familiar with these terms in English at the undergraduate level.

Faculty Member 1 highlighted that they ask the students to use sources in English to handle tasks or do assignments in their courses:

> I suggest them sources, generally research articles in English, to prepare their assignments for my courses. I ask them to make presentations relying on these articles.

In addition to grasping the meaning of the research articles in pharmaceutical literature through translation and a strong command of international pharmaceutical terminology, students are also expected to comprehend professional pharmaceutical videos related to their field, as suggested by Faculty Member 1:

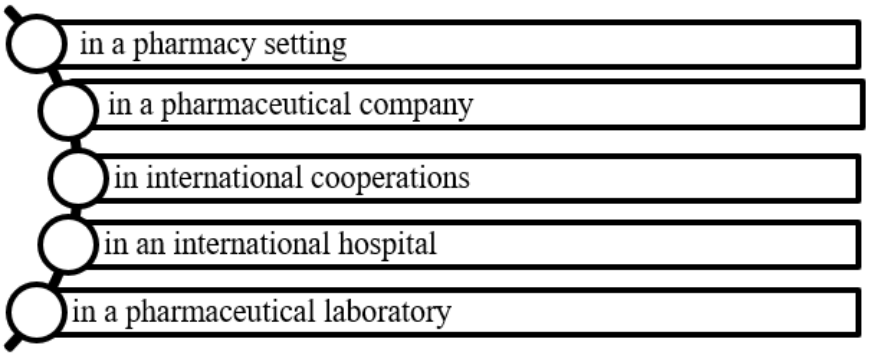
> I use videos on […] scientific developments in class, which are generally in English, students need to have an adequate level of English at least to understand the content better.

In response to the first two questions asked, the need for developing certain EAP skills expressed by the faculty members reveals the EFL learner needs of the setting, where learners need a considerable amount of language support to handle academic tasks in English. A student with limited English proficiency likely represents the typical profile in most EFL contexts, and consequently, the associated language needs align with these intended EAP learning outcomes.

3.1.2. The learning outcomes related to EOP skills

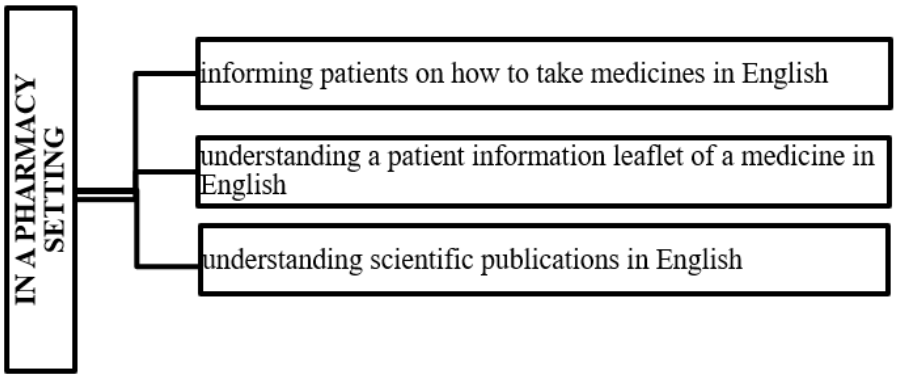
The third question asked during the semi-structured interviews with faculty members sought to gather information on the English language skills that future pharmacists might need in their professional environments. The analysis of their responses identified five distinct categories, which were used to develop learning outcomes related to EOP skills, as illustrated in Figure 4.

Figure 4
The contexts for learning outcomes related to EOP skills (İlter, 2020)



The learning outcomes in a pharmacy setting. The learning outcomes for the first category, "in a pharmacy setting", are shown in Figure 5.

Figure 5
The learning outcomes in a pharmacy setting (İlter, 2020)



Four faculty members highlighted the importance of pharmacists having strong English skills when working in a pharmacy. In contrast, Faculty Member 5 remarked, "I do not think pharmacists in Türkiye require any English proficiency while working in a pharmacy," but acknowledged, "They do need to understand patient information leaflets in English when encountering foreign-brand medications." Supporting this perspective, Faculty Member 2 shared his own experiences with foreign customers:

> In Türkiye, we call a certain medicine with a different brand name. One day [when he worked as a pharmacist] some foreign people came to the pharmacy with a pillbox, which was called with a different name in Türkiye. I understood which medicine it was by looking at the cover of the box, but customers asked me to tell them how to take the medicine. […] In your course, students at the

> pharmacy faculty may compare in English among different medicines which have similar ingredients to heal the same health problem.

This shows even for a slight chance in daily routine in Türkiye's context, a pharmacist needs English in their professional lives at their pharmacy stores. Likewise, other four faculty members pointed out that pharmacists require English to interact with foreign customers in their pharmacies, particularly if the pharmacy is situated in a tourist area, as noted by Faculty Member 1:

> Türkiye's economy partly depends on tourism. In touristic spots, you need to communicate with foreigners in your pharmacy store, which makes your store more preferred than others in such places in that sense.

Likewise, Faculty Member 4 elaborated on other potential situations where English might be needed in a pharmacy:

> Pharmacists working at a touristic spot need to know about some certain terms on how to take medicine. These pharmacists should be able to communicate with foreign patients in their pharmacy stores.

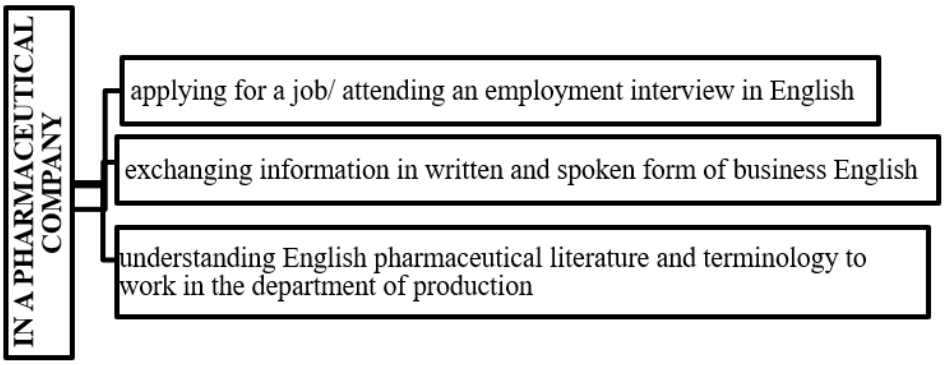
Faculty Member 2 suggested a consultation task as a role-play activity to develop English communication skills of prospective pharmacists:

> There is a patient information competition among the faculties of pharmacy in Türkiye, in which pharmacy students compete on giving the best consultation to their patients. It is like a play in the theatre. […] You act like the pharmacist, and you have a patient who is a professional actor, indeed. You help the patients who ask questions on their health problem and relying on their prescription, you help the patients by talking about how to take the medicine, etc. Students may act out similar cases in class.

In summary, the pharmacist-patient consultation task forms the backbone of the EPP syllabus, which mostly relies on communication between a pharmacist and a patient, informing either on how to take a medicine or on the ingredients of it. ESP practitioners may consider designing role-play activities to hold such patient-pharmacist dialogues on rational drug use in remedy of common illnesses, which also shows variety in different contexts.

The learning outcomes in a pharmaceutical company. The learning outcomes for the second category, "in a pharmaceutical company", are presented in Figure 6.

Figure 6
The learning outcomes in a pharmaceutical company (İlter, 2020)



The faculty members noted that strong English skills allow pharmacists to secure positions at pharmaceutical companies. The potential situations where English would be necessary in such companies are mentioned below, as stated by Faculty Member 2:

> There are some foreign pharmaceutical companies that have factories in Türkiye. A pharmacist who is proficient in English may get into contact with foreign directors abroad. The topic may be about selling medicine or obtaining a licence for a specific medicine. […] People at companies of foreign origin may make presentations in English to Turkish employees, so these pharmacists should communicate in English. All in all, these companies recruit individuals via interviews in English.

> These people should be competent in communicating in English either by e-mail, skype or face-to-face basis to keep in contact with company authorities.

Given his expertise in pharmaceutical chemistry, Faculty Member 4 recommended creating typical scenarios for role-playing, for example, by simulating situations where students are in a laboratory in a pharmaceutical company.

> The prospective pharmacists should be able to express themselves in English by asking and answering questions in personal interactions in a pharmaceutical company. You, as the teacher, may turn these scenarios into dialogues to role-play in class. For example, students may explain how to handle an experiment. They must know the terminology here.

Faculty Member 5 introduced a professional career perspective:

> Pharmacists may attend job interviews in English with employers at pharmaceutical companies; therefore, they broaden their professional network by this means. […] Pharmacists in pharmaceutical companies should be able to exchange e-mails and phone calls with other companies abroad as well as understanding pharmaceutical literature at research and development departments of the unit of production of these companies.

Faculty Member 3 aligned with her colleagues on the industrial pharmacy dimension:

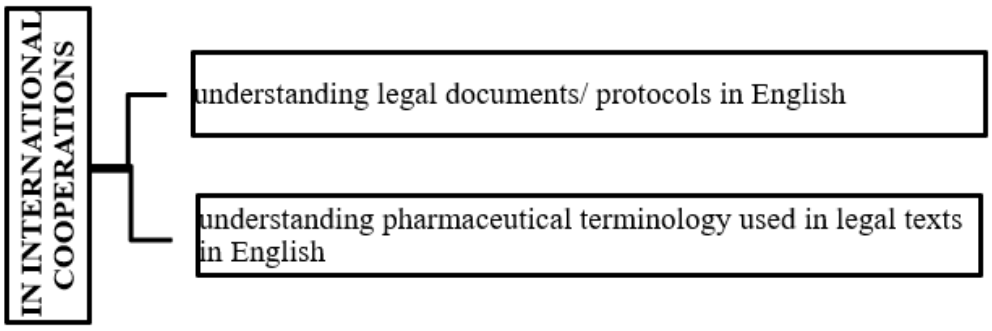
> In business writing, there are some specific terms used in pharmaceutical companies. Even though business writing has a universal format, each department within such companies also has its own unique terminology important for their work, such as production line, etc. When I was doing my internship as an undergraduate student at a pharmaceutical company of foreign origin, I learned lots of new terms related to specific procedures of industrial pharmacy. These procedures may be asked to explain in English to the pharmacists in pharmaceutical companies of foreign origin.

Relying on the faculty members' responses, it is seen that workplace ESP learning outcomes mostly require some sort of fundamental business English skills, which are exchanging e-mails or phone calls, or attending a job interview etc. In addition, ESP practitioners should consider some context-specific learning outcomes of their unique setting as well, which are knowing certain terminology and literature the setting requires. These learning outcomes may serve for workplace ESP skills, and syllabus designers should also be aware of these context-specific needs.

The learning outcomes in international cooperations. The learning outcomes for the third category, "in international cooperations", are presented in Figure 7.

Figure 7

The learning outcomes in international cooperations (İlter, 2020)



The faculty members emphasized the importance of using English effectively in international collaborations, whether among pharmaceutical companies in Türkiye and abroad, or among various departments of the Turkish Ministry of Health and foreign stakeholders or partners. Faculty Member 1 explained this need as follows:

> At governmental departments, if you have a good command of English, and an adequate score on standardized English language proficiency tests, you get the chance to be employed in projects held abroad. […] A sound English proficiency enables you to take part in such projects and organisations. […] A pharmacist who is proficient in English may understand international protocols between the Ministry of Health and foreign pharmaceutical companies, which will make it easier for pharmacists to find positions in the departments of the Ministry of Health as well. Additionally, such

> pharmacists may also mentor Turkish pharmaceutical companies to establish networks with their counterparts abroad.

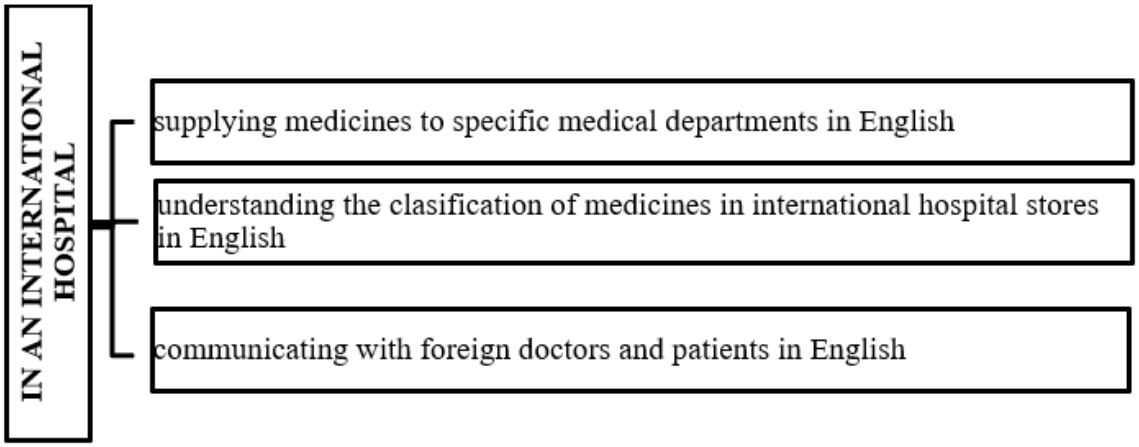
Likewise, Faculty Member 5 highlighted the benefit of being proficient in English for pharmaceutical purposes, stating:

> A pharmacist who is proficient in English is able to attend exhibitions abroad related to the pharmaceutical sector and learn about medicine and find partners for networking in the future.

As seen in the responses above, proficiency in English is also essential for participating in international collaborations within the pharmaceutical sector. A graduate pharmacy student can also consider participating in such international collaborations, either in foreign-based pharmaceutical companies or in the relevant department of Turkish Ministry of Health. As a result, proficiency in English for pharmaceutical purposes expands job opportunities for pharmacy students.

The learning outcomes in an international hospital. The learning outcomes derived from the fourth category, "in an international hospital," are displayed in Figure 8.

Figure 8
The learning outcomes in an international hospital (İlter, 2020)



Faculty members expressed that pharmacists proficient in English can also work in international hospitals. Faculty Member 1 highlighted this potential job opportunity of working as a pharmacist in international hospitals, either in Türkiye or abroad, where pharmacists may collaborate with foreign medical staff and/or provide consultations to foreign patients:

> In clinical services, the pharmacists may encounter foreign patients as well as foreign health professionals as clinical doctors. The clinical pharmacists may have to collaborate with foreign professionals in certain cases; thus, proficiency in English is vital in such cases.

Furthermore, Faculty Member 3 also observed that pharmacists working in international hospitals may need English in the following situations:

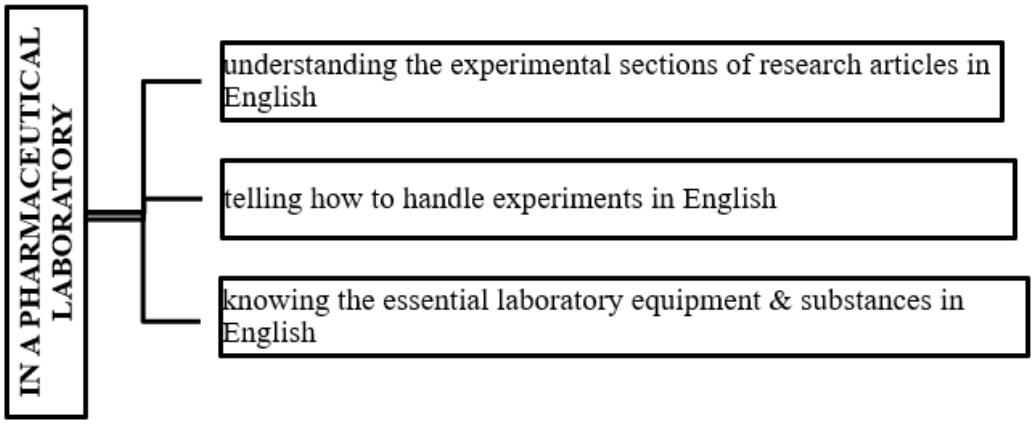
> A pharmacist in an international hospital may be in dialogue with foreign doctors. A pharmacist deals with medicine by sorting them out relying on their functions. They store medicine into different closets. By sorting out the medicine, they write notes including the expiration dates, etc. As the medicines are depleted in the storage, the automation on the pharmacist's computer informs the pharmacist. The pharmacist checks the overall medicine store and supply the department accordingly. These tasks may be done in written English at such hospitals […] Doctors may also ask pharmacists to make up medicine for specific patients, for example in a different formula other than pills.

As seen from the faculty members' responses above, communicating in English within an international hospital either abroad or in Türkiye requires pharmacists to handle certain tasks in English, which are interacting with foreign medical staff or patients and carrying out specific tasks

in the hospital pharmacy depot. For further pharmaceutical tasks to perform in international hospitals, ESP practitioners may consult the staff in different hospital departments.

The learning outcomes in a pharmaceutical laboratory. The learning outcomes derived from the fifth category, "in a pharmaceutical laboratory", are presented in Figure 9.

Figure 9
The learning outcomes in a pharmaceutical laboratory (İlter, 2020)



Faculty members pointed out that as part of their jobs, pharmacists may need English in pharmaceutical laboratories as well. Faculty Member 4 stressed the importance of being proficient in English when it comes to understanding laboratory equipment and the procedures for conducting experiments in English, especially if pharmacists work in laboratories abroad or with foreign partners in laboratories within Turkish pharmaceutical companies:

> When I went abroad [to study at laboratories], or when I read a scientific article, I benefitted from using these words [laboratory equipment] in English in our laboratories [in Türkiye]. […] Even if I did not have an advanced level of English proficiency, I understood the terminology […] when a professor talked about the methodology while performing an experiment.

Faculty Member 3 also mentioned that understanding English laboratory terminology is essential for conducting experiments in pharmaceutical labs:

> Students may handle an experiment at a laboratory by looking at the experimental section of a scientific article in English, and they may explain the procedures during the experiment. Firstly, they may talk about the formula, and then just like giving a recipe, they may handle the experiments while talking about what they are actually doing. The students may also make use of YouTube videos to perform dialogues […] at a research and development department.

The responses above show that pharmaceutical lab terminology in English is significant not only in professional but also in academic settings. Some certain lab terminology and equipment names in English are, of course, supposed to be known by prospective pharmacists as well as mastering related lab tasks in English medium; however, depending on the specific pharmaceutical laboratory, context-specific terminology and equipment names should also be taken into consideration while formulating learning outcomes for EPP learners.

As previously stated, although the learning outcomes emerged from the responses of the pharmacy faculty members in the study may surely need adaptations in different ESP contexts in EFL settings, the learning outcomes related to EAP and EOP skills may lay the foundation for an EAPP syllabus in an EFL environment. ESP practitioners may utilize the highlighted contexts for EOP skills to contextualize their courses and formulate related goal and objectives accordingly, considering possible EAP needs mentioned to compensate for language needs of their EFL students. The following context-driven tasks determined in the document analysis of the study may also help enrich this pool of learning outcomes for an EAPP syllabus to be held in EFL settings.

3.2. The Findings from the Document Analysis

Through a document analysis of EOP syllabi in Türkiye, the teacher-researcher identified 35 pharmacy faculties, with 29 actively offering education. Among these, only seven published course content online in their undergraduate program guides and included EOP courses in their curricula. Of the remaining faculties, some (n=6) did not provide any course information packages online; others (n=10) did not offer an EOP course in their curricula; and a few (n=6) offered EOP courses but did not publish the course content online. Consequently, the teacher-researcher reviewed the course content of six faculties. Alongside semi-structured interviews, the data from these syllabi may contribute to filling gaps in the pool of learning outcomes for an EAPP syllabus. Table 1 shows the context-driven tasks acquired in different EOP course syllabi in Turkish pharmacy faculties.

As illustrated in Table 1, the learning outcomes span a variety of skills, including using English to exchange information with colleagues in pharmaceutical companies, research and development departments in public and private sectors, and at professional or academic conferences, as well as effectively communicating with patients in pharmacies and with healthcare professionals in clinical hospital settings. These context-driven learning outcomes, identified through the review, may serve to cross-validate and supplement data gathered from interviews with faculty members, requiring ESP practitioners to adapt to their specific ESP setting, where they teach EAPP to prospective or in-service pharmacists.

Ultimately, as the other part of the document analysis, which is to search for available ESP coursebooks for pharmaceutical purposes in Türkiye, as previously noted, only one ESP coursebook was economically and logistically accessible in the market for pharmacy students within the study context: *English for Pharmacy Writing and Oral Communication* by Diaz-Gilbert (2008). This book includes terminological vocabulary, patient-pharmacist dialogues, and activities on 12 body systems. While the book's organization was promising, its English level was too advanced for the teacher-researcher's current students, and its context was designed for ESL environments, requiring adaptations for EFL settings. The book could still be used as a supplementary resource when needed, though. Additionally, the coursebook included medical vocabulary comprehension tasks related to twelve body systems, patient-pharmacist dialogues presented through listening and pronunciation exercises, and pharmaceutical writing activities. However, the pharmaceutical documentation was tailored to American contexts rather than Türkiye's, as the book was originally designed for ESL learners in U.S. pharmaceutical settings. Nevertheless, the book's structure and content can be used as a supplementary resource when developing activities for the syllabus.

4. Discussion and Conclusion

The suggested pool of learning outcomes for an EAPP syllabus in this study stems from the teacher-researcher's effort to address a practical challenge within her teaching environment. Since ESP course design is inherently context-specific, the proposed learning outcomes are tailored to the particular group of participants involved in this study. This means that while the suggested EAPP syllabus can serve as a model for similar contexts, it is important to recognize that every ESP setting is unique, with its own characteristics that may align with or differ from those in the current study. Consequently, ESP practitioners should consider these contextual factors when adapting the learning outcomes, ensuring they respond to the needs and expectations of their specific group of learners. This process may lead to the addition of supplementary outcomes adapted to their unique context. Ultimately, this pool of learning outcomes is intended to provide ESP practitioners with a practical reference point for designing their own courses.

Similarly, Syakur et al. (2020) investigated the needs of ESP courses for Indonesian vocational pharmacy students, focusing on target and learning requirements. Data were collected through

Table 1
The context-driven tasks in different EOP course syllabi (İlter, 2020)

Context and Pharmaceutical Content	Tasks in English
Medical use	
Organs and body systems	Informing patients in written and spoken forms
Diseases, diagnosis and treatments	
Pharmaceutical company	
Business communication	Writing a cover letter and a CV
	Writing and responding to business emails
	Introducing and comparing the features of medicine with others in an oral presentation
Pharmaceutical laboratory	
Laboratory equipment	Telling how to handle an experiment, using laboratory terminology
Laboratory safety	Writing experiment reports
Pharmaceutical chemistry experiments	Recognizing the forms, doses, active pharmaceutical ingredients in medicine and the related mechanisms in experiment reports
ESCOP monographs	
Pharmacognosy and pharmaceutical botanics	Recognizing botanical preparations and parts and their effects and uses in experiment reports
Toxicology	
Pharmacology	
Academic use	
Research articles	Recognizing pharmaceutical terminology in research articles
Proceeding papers	Translating research articles and proceedings
Academic and/or professional seminars and presentations	Writing research articles and proceedings
	Giving seminars and presentations on pharmaceutical topics
	Communicating with colleagues in professional contexts
Pharmacy store	
Patient information leaflet	Understanding the patient information leaflets of the prescribed and OTC medicine
Patient-pharmacist communication	Telling patients how to take medicine: in what doses; how often, how to store, etc.
	Performing patient- pharmacist dialogues to inform about health problems and treatments

questionnaires and interviews held with the students and English lecturers, revealing the following areas of focus: active communication skills, grammar difficulties, reading ability, material difficulty, and writing skills. The findings highlight students' academic needs and goals in learning English. Key topics include basic pharmacy, prescription pharmacy, health and medications, healthy lifestyle, and microbiology, each receiving equal emphasis in the syllabus. From this perspective, it is seen that the key topics are centred around tasks in a pharmacy setting. The findings of the needs analysis study by Syakur et al. (2020) reveal learning outcomes similar to those of the current study, as both identify EAP language needs and highlight the communicative skills dimension rooted in the language needs of learners in EFL contexts. These findings also recall the previous EPP studies held in EFL settings, which indicates an inevitable portion of language support needed for EPP courses.

In another needs analysis study, Sari et al. (2022) developed an ESP course for pharmacy students, in which they generated 11 learning outcomes, relying on the data they gathered from semi-structured interviews with a pharmacy lecturer, an English lecturer and two pharmacists alongside a questionnaire held with 350 pharmacy students. As a result of the study, they generated an integrated English syllabus based on needs analysis. The learning outcomes were 1)engaging in discussions with patients and coworkers; 2) responding to phone inquiries from patients and colleagues; 3) communicating about self-medication and other pharmaceutical concepts; 4) asking questions and sharing relevant information; 5) describing the types of medications required by patients; 6) providing patients with explanations regarding medications, dosages, usage instructions, and potential effects; 7) gathering information within a hospital setting; 8) explaining prescriptions or medical devices to patients; 9) completing patients' data records; 10) extracting key ideas from work-related documents; and 11) preparing work reports. The results highlight similarities in the learning outcomes identified in the current study, which consider not only tasks specific to pharmacy settings but also those related to hospital environments and pharmaceutical company contexts. Additionally, the emphasis on learners' language needs reflects a common feature of EFL contexts.

In a recent needs analysis study conducted by Mahmoodi et al. (2023), 65 students and 11 pharmacy lecturers were relied on their suggestions on ESP needs of pharmacy students. As a result of their qualitative study, it was found out that the lecturers regarded reading comprehension as the most essential skill, followed in order of importance by writing, speaking, and listening. In contrast, students emphasized that speaking skills are nearly as critical as the other language skills. They expressed a strong interest in verbal communication within specific contexts, such as scientific conferences, and highlighted the importance of acquiring pharmacy terminology, academic writing proficiency, prescription abbreviations, and medical terminology. Additionally, course participants expressed their expectation that the program would be jointly facilitated by TEFL experts and pharmacists, which is one of the arguments of the current study. In Mahmoodi et al.'s (2023) study, EAP skills are weighed more than EOP skills in the designed syllabus, which shows the effect of context in syllabus design once more. The study context is Iran, which is an EFL country, and this weigh on EAP skills in the syllabus may derive from the EFL features of the setting. EAP skills in the current study are in parallel with those of Mahmoodi et al.'s (2023) in terms of academic writing proficiency and acquiring pharmacy terminology. ESP practitioners may find such similarities in their learners' ESP needs, and thus, may benefit from such learning outcomes related to EAP skills in designing their ESP courses in EFL settings.

It is evident that the current study demonstrates a relatively broader range of learning outcomes related to the use of English in pharmaceutical contexts compared to previous needs analyses. Common features across all needs analyses include learning outcomes focused on EAP skills, as well as EOP skills, particularly in pharmacy and hospital settings, which are key environments where pharmacists typically work. Unlike previous studies, the current study not only addresses learning outcomes related to EAP skills necessary for university study and EOP skills essential in pharmacy or hospital settings but also includes tasks relevant to pharmaceutical companies, international collaborations, international hospitals, and pharmaceutical laboratories.

Moreover, the context-driven learning outcomes derived from the document analysis include various pharmaceutical topics, such as pharmacognosy and pharmaceutical botanics, as can be seen in Table 1, which may further expand domain-specific knowledge in topical considerations during course design. Consequently, the learning outcomes related to EAP and EOP skills identified in this study may suggest alternative learning outcomes for ESP practitioners interested in EAPP teaching. As emphasized in the ESP literature on pharmacy, each ESP context has unique characteristics regarding communication dynamics. Therefore, by considering these contextual elements, the learning outcomes identified in this study, along with insights from previous ESP studies on pharmacy contexts, can provide valuable guidance for ESP practitioners in adapting their courses.

The current study was conducted in a modest-sized city in eastern part of Türkiye, where encountering a foreign patient at a pharmacy on an average day was uncommon. However, ESP practitioners teaching in ESL contexts, larger cities, or touristic areas with a high foreign population could design tasks to be carried out directly in pharmacies. This would enable learners to interact with foreign patients and practice the skills they acquired in ESP courses through patient counselling dialogues. As highlighted earlier, contextual factors significantly influence the scope of ESP syllabi, and it is the responsibility of ESP practitioners to account for these factors when designing and implementing their syllabi.

Future studies could focus on needs analysis or syllabus evaluation to develop a more comprehensive EAPP syllabus. In the current study, the researcher supplemented the learning outcomes proposed by faculty members by reviewing the existing syllabi of occupational English courses offered by 29 pharmacy faculties. Among these, only seven faculties, including the teacher-researcher's own institution, made their undergraduate course content available online and included EOP courses in their curricula. The teacher-researcher analysed these syllabus components in terms of pharmaceutical contexts and language skills. Building on these findings, ESP instructors teaching EOP and faculty members as subject-matter experts could contribute to evaluating the existing syllabi through larger-scale studies. Such evaluations could provide the basis for further needs analysis, ultimately supporting the development of an EAPP syllabus tailored to the linguistic and pharmaceutical needs of broader populations. Similar approaches could also be applied to design syllabi for EOP courses in other fields as well.

As previously stated, content experts with in-depth knowledge of their fields play a crucial role in developing learning outcomes for ESP courses. As members of the specific community of practice, they provide ESP instructors with insights into the contextual language needs of learners within these settings (Ghezali, 2021; Giles & Yazan, 2019; Tiongson, 2018). When participants have diverse academic or professional backgrounds, the pool of learning outcomes becomes more comprehensive and addresses a wider range of language profiles. Dudley-Evans and St. John's (1998) framework identifies three interaction levels between content teachers and ESP instructors in that sense; namely, cooperation (ESP teachers gather content information via surveys, observations, and interviews but teach separately. They may share resources and align lesson plans to avoid overlap but do not co-plan.); collaboration (teachers jointly plan, deliver, and assess instruction with shared responsibility. They focus on general language skills, task-specific needs, or additional support for struggling students to enhance academic success.); and team teaching (teachers co-plan and co-deliver lessons in a fully integrated manner, sharing instructional responsibilities, particularly for students with significant learning needs or for innovative teaching methods.) In a business school at Ibn Tofail University in Morocco, such a collaboration was realized among ESP teachers and content teachers in an attempt of interdisciplinary team teaching (Raha et al., 2024). In the study, ESP teachers were paired with subject specialists to develop language teachers' mastery of the content knowledge. Even though team teaching could not be realized, most ESP practitioners of the study supported such a collaboration, and they were engaged in cooperation and collaboration levels of team teaching, which contributed to their content knowledge. Moreover, in the pharmacy domain, researchers may also broaden the scope of needs analysis by including pharmacists or human resources professionals from pharmaceutical

companies. By gathering their perspectives on the occupational skills requiring English proficiency, these insights could be incorporated into the syllabus design for a larger-scale EAPP syllabus, ensuring it aligns more effectively with real-world professional demands.

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Data availability: The dataset of the study is available from the corresponding author on reasonable request.

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