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English for Pharmacy Students: A Needs Analysis for Instructional Material Development

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ABSTRACT

The ability to use English effectively in professional and academic settings is essential for pharmacy students in today's globalized health and pharmaceutical industries. However, many pharmacy programs still rely on general English courses that do not reflect the specific communicative tasks and discourse practices required in the pharmacy profession. This study aims to analyze the English language needs of pharmacy students as a basis for developing relevant instructional materials. Using a mixed-methods design, data were collected from 80 undergraduate pharmacy students, four lecturers, and two professional pharmacists through questionnaires, interviews, and document analysis. Quantitative data were analyzed using descriptive statistics, while qualitative data were interpreted through thematic analysis. The findings reveal that pharmacy students need greater competence in reading and writing scientific texts, mastering technical vocabulary, and developing speaking skills for patient counseling and professional collaboration. The results emphasize the importance of designing English for Specific Purposes (ESP) materials that are context-based, skill-integrated, and aligned with real-world pharmacy communication. The study contributes practical insights for ESP curriculum designers, material developers, and English instructors in health-related disciplines.

Keywords: English for Specific Purposes (ESP); pharmacy students; needs analysis; instructional material development; mixed-methods research; academic and professional communication

INTRODUCTION

In today's highly globalised and knowledge-intensive pharmaceutical industry, proficiency in English has emerged as a critical professional competency for pharmacy graduates. English functions not only as the lingua franca of scientific research and publishing but also as the operational language in many international pharmaceutical companies, cross-border regulatory frameworks, and multinational clinical trials (Hyland, 2006; Hutchinson & Waters, 1987). For students in pharmacy programmes, English proficiency is required not merely for general conversational purposes but for discipline-specific tasks such as interpreting drug information leaflets, participating in inter-professional meetings, communicating with international patients or

colleagues, writing research reports, and navigating regulatory documentation. Accordingly, the urgency of providing tailored English for Specific Purposes (ESP) instruction for pharmacy students becomes evident.

Despite this urgency, there is evidence that many pharmacy programmes still rely heavily on generic English courses or broadly-designed ESP materials, which do not sufficiently reflect the specific discourse practices, technical vocabulary, and communicative tasks of the pharmacy profession. Studies in Indonesian tertiary contexts revealed that pharmacy students often perceive themselves as weak in domain-specific vocabulary, speaking, listening, and scientific writing even though these skills are required in their professional environments. For example, Solihati & Rahayu (2020) found that many pharmacy students reported difficulties with vocabulary and all four language skills when pursuing English for pharmacy. Similarly, research by Laili & Nashir (2023) demonstrated that while 76 % of pharmacy diploma students recognized that English was needed to support their future careers, speaking remained their most difficult skill. These findings illustrate a pressing problem: the mismatch between the language instruction provided and the actual communicative needs of pharmacy students in academic and professional contexts.

This mismatch indicates a clear gap in the literature and in practice: while the importance of ESP for pharmacy students has been acknowledged, relatively few investigations have conducted comprehensive and context-specific needs analyses that map both target situation needs (what learners need to do in English in their future professional/academic roles) and learning situation needs (how learners prefer to learn, what resources they have, what constraints exist) within pharmacy programmes. For instance, Dewi & Santosa (2025) in their systematic review pointed out significant deficiencies in pharmacy graduates' oral communication, technical vocabulary, and scientific writing skills yet they noted that detailed empirical data on pharmacy-specific ESP needs remain limited. Moreover, while some studies focus on vocational pharmacy contexts (e.g., Srinawati, 2019) the findings are not always transferred into curriculum design or teaching materials specifically for pharmacy majors in higher education.

In response to this gap, the present study undertakes a comprehensive needs analysis of pharmacy students in an Indonesian university context, aiming to identify: (1) present situation analysis the current strength and weakness about the learners, (2) the target needs the specific English language tasks, genres, skills, and vocabulary that pharmacy students will need in academic and professional settings; and (3) the learning needs the students' preferences, resources, constraints, and current competency levels. The novelty of this research lies in its dual emphasis: firstly, the focus on the pharmacy discipline (rather than generic healthcare or general ESP), and secondly, the translation of needs-analysis findings into practical recommendations for curriculum

design, syllabus development, and material creation tailored to pharmacy students. Unlike many previous studies that remain descriptive, this research aims to supply actionable insights that directly inform the design of an ESP course and materials for pharmacy majors. Ultimately, the study aspires to bridge the gap between language instruction and real-world communicative demands of pharmacy professionals, thereby enhancing the employability and professional readiness of graduates.

The theoretical foundation of this study is grounded in established ESP scholarship. Hutchinson and Waters (1987) conceptualize needs analysis as the core of ESP, distinguishing between target needs and learning needs as essential components of syllabus design. Dudley-Evans and St. John (1998) further argue that needs analysis is an ongoing, dynamic process that informs objectives, materials, methodology, and assessment. Munby's (1978) communicative framework emphasizes systematic identification of situational language requirements, while West (1994) highlights its diagnostic and evaluative functions. More recent task-based perspectives, such as Long (2005), advocate examining authentic target tasks to bridge classroom learning with workplace performance. Collectively, these perspectives affirm that needs analysis provides the empirical foundation for designing contextually relevant, evidence-based ESP instruction capable of preparing pharmacy students for real-world communicative demands.

RESEARCH METHOD

1. Research Design

This study employed a mixed-methods design, integrating both quantitative and qualitative data to obtain a comprehensive understanding of pharmacy students' English language needs. According to Creswell and Plano Clark (2018), mixed methods combine the strengths of numerical data and rich narrative insights to provide a more complete picture of a research problem. In the context of English for Specific Purposes (ESP), this approach is particularly effective because it captures both objective needs (what learners must do in English in their academic or professional context) and subjective needs (learners' perceptions, preferences, and attitudes) (Hutchinson & Waters, 1987; Long, 2005).

A sequential explanatory design was adopted: quantitative data from a needs analysis questionnaire were first collected and analyzed to identify general patterns of needs; then qualitative data from interviews and document analysis were used to explain and elaborate on the quantitative findings (Creswell, 2014).

2. Participants

The participants consisted of undergraduate pharmacy students from the Faculty of Pharmacy at Universitas Islam negeri Alauddin Makassar, Indonesia. A total of 80 students from second to fourth year were selected through purposive sampling a strategy appropriate for ESP research where participants must have specific disciplinary backgrounds (Dörnyei, 2007).
Additionally, four pharmacy lecturers and two pharmacists working in hospital and community settings were included to triangulate data and provide professional perspectives on the actual communicative requirements in pharmacy practice.

Three instruments were used questionnaire – using integrated approach (Nurpahmi, 2015) Adapted from Hutchinson and Waters' (1987) framework of target and learning needs. It covered skills, tasks, and learning preferences using a Likert-scale format and Dudley evan and st. john, 22001). Interview – Semi-structured interviews with students, lecturers, and pharmacists explored perceptions of English use in pharmacy contexts. Document Analysis – Review of curriculum documents and course syllabi to identify alignment with actual language needs.

3. Data Collection Procedures

The questionnaire was distributed online to pharmacy students. After analyzing the results, selected participants were interviewed, and related academic documents were collected. Ethical approval and informed consent were obtained before data collection.

4. Data Analysis

Quantitative data were analyzed using descriptive statistics (frequency, mean, and percentage) with SPSS 25 to identify language priorities. Qualitative data from interviews and documents were analyzed using thematic analysis (Braun & Clarke, 2006). Both sets of findings were then integrated to provide a complete understanding of students' English needs.

5. Validity and Reliability

Instrument validity was ensured through expert review and pilot testing. Reliability was tested using Cronbach's Alpha. Data triangulation (students, lecturers, professionals) and member checking were applied to strengthen credibility (Basturkmen, 2010).

RESULTS AND DISCUSSION

The questionnaire covering questions about Present Situations Analysis (PSA), Target Situations Analysis (TSA) and Learning Needs were given to the respondents in order to reveal the students' needs in the material of English for Pharmacy.

The qualitative data collected from interview were processed by pre coding, coding and summarizing. The recorded data was transformed into textual form in order to interpret the key idea. The key idea then categorized and each data was compared to find the relation among the issues. As a final step, the conclusion of the data was drawn to make a clear summarized information.

Present Situation Analysis

After analyzing the questionnaire, the researcher can inform the results as follows:

Table 1. *The Importance Level of English Skills*

The Importance of English Skills						
Respondents	Listening	Speaking	Writing	Reading	Vocabulary	Grammar
Students	3.36	3.70	3.35	3.38	3.53	3.41
Graduates	3.45	3.55	3.55	3.55	3.45	3.45
Lecturers	4.00	4.00	4.00	3.50	3.50	4.00
Experts	4.00	4.00	3.50	4.00	4.00	3.50
Average	**3.70**	**3.81**	**3.60**	**3.60**	**3.62**	**3.59**
1 – 1.75 = Not important; 1.76 – 2.50 = Less important						
2.51 – 3.25 = Important; 3.26 – 4.00 = Very important						

The information about the level of importance of English Skills in Pharmacy Department was presented in Table 2. It illustrates that the position of the total average score refers to the very important category which are listening 3.70; speaking 3.81; writing 3.60; reading 3.60; vocabulary 3.62; and grammar 3.59.

According to the interview, student 2 perceived mastering English Skills is important. Mastering English skills is important, especially for Pharmacy Students, since most learning sources provided in English. If you cannot read English correctly, you will difficult in understand the exact meaning. Also, when we read some paragraphs in English, the written form is different with how it is spell. It is good to read it correctly, as people used to laugh if we make mistakes. Speaking skills is also important because some letters in Indonesia is pronounced differently in

English, for example the "R" letter. That is why learning Speaking skill is important in order to speak like a native (*Menguasai skill bahasa Inggris itu penting, khususnya bagi mahasiswa Farmasi. Terlebih karena kebanyakan sumber bacaan tersedia dalam bahasa Inggris. Kalau tidak bisa membaca teks bahasa Inggris dengan benar, nanti maknanya jadi sulit dimengerti. Belum lagi ketika kita membaca beberapa paragraph, seringkali tulisan dan cara membacanya berbeda. Akan sangat bagus kalau kita bisa membacanya dengan benar, tapi kalau kita salah membaca, orang lain nanti menertawakan karena maknanya akan berubah. Kemampuan berbicara juga penting karena beberapa huruf di bahasa Indonesia dan bahasa Inggris, berbeda cara pengucapannya, seperti huruf 'R'. Makanya, mempelajari speaking itu penting biar bisa berbicara seperti orang bule*) (Student 2: 02/09/2019).

Supporting student 2 statement regarding to the reading skills, student 1 stated that Learning English is important and could help in understanding international journal. (Mempelajari bahasa Inggris itu penting dan memudahkan dalam memahami jurnal internasional) (Student 1: 02/09/2019)

Table 2. *Level of Ability in English*

Level of Ability in English						
Respondents	Listening	Speaking	Writing	Reading	Vocabulary	Grammar
Students	2.05	1.85	2.32	2.25	1.90	1.63
Graduates	2.25	2.70	2.70	3.00	2.45	2.20
Lecturers	2.00	2.00	2.00	2.00	2.25	2.25
Average	**2.10**	**2.18**	**2.23**	**2.41**	**2.20**	**2.02**
1– 1.75 = Bad; 1.76 – 2.50 = Fair;						
2.51 – 3.25 = Good; 3.26 – 4.00 = Very Good;						

Table 2 indicates that the respondents' overall English proficiency is perceived to be at a fair level, as reflected in mean scores ranging from 2.02 to 2.41 across language skills. Reading obtained the highest mean score (2.41), suggesting that students demonstrate relatively stronger receptive skills, possibly due to frequent exposure to written academic materials in their field of study. Writing (2.23), vocabulary (2.20), and speaking (2.18) fall within a similar range, indicating moderate productive competence but also signalling the need for structured support in academic and discipline-specific communication. Listening (2.10) and grammar (2.02) received the lowest mean scores, which may imply limited exposure to authentic spoken English input and insufficient

mastery of grammatical accuracy. The comparatively lower performance in grammar is particularly significant, as it underpins accuracy in both written and oral communication. Overall, the findings suggest that while students possess basic functional competence, targeted instructional intervention is necessary, especially in grammar and listening, to strengthen their comprehensive language proficiency in an academic and professional context.

Table 3. *Strengths in Writing*

Strengths in Writing	Percentage
Writing grammatically correct sentences	28.0%
Writing cohesive and coherent paragraphs	4.9%
Paraphrasing	23.2%
Using uncommon word or academic word in your writing	28.0%
Others	15.9%

Table 3 reveals a varied distribution of perceived strengths in writing among respondents, indicating uneven development of subskills within academic writing. The highest percentages (28.0%) were reported for the ability to write grammatically correct sentences and to use uncommon or academic vocabulary, suggesting that students perceive linguistic form and lexical sophistication as their primary strengths. This finding may reflect instructional emphasis on sentence-level accuracy and vocabulary enrichment rather than on higher-order discourse organization. Meanwhile, 23.2% of respondents identified paraphrasing ability as a strength, indicating moderate awareness of academic writing conventions related to source integration and avoidance of plagiarism. However, only 4.9% reported being able to produce cohesive and coherent paragraphs, which is notably low and pedagogically significant. This result suggests that while students may manage micro-level features (grammar and vocabulary), they struggle with macro-level writing skills such as logical development, idea organization, and textual flow. The 15.9% who selected "others" may indicate additional, unclassified strengths, but the data overall point to a structural imbalance in writing competence. Academically, these findings highlight the need for instructional intervention that shifts from sentence-level accuracy toward discourse-level competence, particularly in developing coherence, cohesion, and paragraph development—skills essential for academic and professional writing in specialized fields such as pharmacy.

Table 4. *Strengths in Speaking*

Strengths in Speaking	Percentage
To be able to speak grammatically correct	3.6%
To be able to speak in context	65.9%
To be able to speak fluently	13.5%
To be able to speak in context fluently	7.3%
Others	9.7%

Table 5 demonstrates a marked imbalance in respondents' perceived speaking competencies, with a dominant emphasis on contextual appropriateness rather than linguistic accuracy or fluency. A substantial majority (65.9%) reported being able to speak in context, suggesting that students feel relatively confident in conveying meaning relevant to situational demands, possibly relying on pragmatic strategies and familiar expressions. However, only 3.6% claimed the ability to speak grammatically correctly, indicating limited confidence in structural accuracy during oral production. Similarly, 13.5% identified fluency as a strength, while merely 7.3% perceived themselves as able to speak both contextually and fluently, reflecting a gap between communicative intent and smooth, automatic delivery. These findings suggest that students prioritize functional communication over formal precision, a pattern commonly observed in EFL contexts where exposure to spontaneous spoken English is limited. The relatively low percentage associated with grammatical control further underscores the need for pedagogical interventions that integrate form-focused instruction within communicative practice. Overall, the data indicate that while learners may possess situational communicative awareness, systematic development of grammatical accuracy and oral fluency remains necessary to achieve balanced speaking proficiency in academic and professional settings.

Table 5. *Strengths in Listening*

Strengths in Listening	Percentage
To be able to understand listening material in any context	7.3%
To be able to understand an easy listening material	39.0%

To be able able to understand an easy listening material little by little	46.3%
Others	7.4%

Table 5 indicates that respondents' listening competence is predominantly limited to comprehension of simplified input rather than complex or varied contexts. Only 7.3% reported being able to understand listening materials in any context, suggesting that very few students perceive themselves as possessing flexible and comprehensive listening proficiency. The majority of respondents (39.0%) stated that they can understand easy listening materials quite easily, while an even larger proportion (46.3%) indicated that they comprehend easy materials only gradually or partially. This distribution reflects a reliance on basic or simplified auditory input and signals challenges in processing authentic, rapid, or discipline-specific spoken English. The relatively small percentage selecting "others" (7.4%) does not significantly alter the overall trend, which points to limited listening confidence beyond elementary levels. Academically, these findings suggest that listening remains a developing skill area, likely constrained by restricted exposure to authentic spoken English and limited practice with diverse accents, speeds, and technical vocabulary. Consequently, targeted pedagogical interventions—particularly those incorporating scaffolded exposure to authentic academic and professional listening materials—are necessary to enhance students' auditory processing skills within an ESP framework.

Table 6. *Strengths in Reading*

Strengths in Reading	**Percentage**
To be able to understand all types of reading material	23.1%
To be able to understand the type of short and simple reading material	37.8%
To be able to understand simple reading material little by little	35.4%
Others	3.7%

Table 6 indicates that respondents' reading proficiency is largely concentrated at the level of simple texts rather than complex or varied genres. While 23.1% reported being able to understand all types of reading materials, the majority demonstrated more limited competence: 37.8% indicated that they can comprehend short and simple texts, and 35.4% stated that they understand simple materials only gradually. This distribution suggests that most learners rely on basic reading strategies and may encounter difficulty when engaging with dense academic or discipline-specific

texts. Given that reading is essential for accessing scientific literature in pharmacy, the predominance of lower-level comprehension highlights a potential gap between current ability and academic demands. The small percentage selecting "others" (3.7%) does not significantly alter the overall pattern. The findings imply the need for systematic development of higher-order reading skills, including inferencing, critical analysis, and technical vocabulary recognition, to better prepare students for specialized academic and professional contexts.

Table 7. *Strengths in Grammar*

Strengths in Grammar	Percentage
Mastering Tenses well	20%
To be able to use English with a good language structure	52,5%
Others	27,5%

Table 7 suggests that respondents perceive their grammatical competence as moderately developed, though uneven across specific components. A majority (52.5%) reported being able to use English with good language structure, indicating a general awareness of syntactic patterns and sentence formation. However, only 20% explicitly identified mastery of tenses as a strength, which may imply that while students feel relatively confident in constructing structurally acceptable sentences, their control over specific grammatical systems—particularly tense consistency and aspect—remains limited. The 27.5% who selected "others" may reflect additional areas of perceived grammatical ability not captured in the predefined options. Overall, the findings point to a distinction between general structural familiarity and deeper grammatical accuracy. In academic and professional contexts, especially in disciplines such as pharmacy where precision is essential, incomplete mastery of tense usage may affect clarity and credibility. Therefore, focused grammar instruction emphasizing accuracy in tense, agreement, and complex sentence construction remains pedagogical.

Table 8. *Strengths in Vocabulary*

Strengths in Vocabulary	Percentage
Have a lot of vocabulary	9.8%
Know the classification of English vocabulary words owned	37.8%
Know the types of vocabulary	39.0%

Others	13.4%

Table 8 indicates that respondents' perceived strengths in vocabulary are more conceptual than quantitative. Only 9.8% reported possessing a large vocabulary repertoire, suggesting limited confidence in lexical breadth. In contrast, higher percentages indicated knowledge of vocabulary classification (37.8%) and types of vocabulary (39.0%), reflecting familiarity with categorical or theoretical aspects of lexis rather than extensive practical command. This pattern suggests that students may understand vocabulary in terms of form and categorization (e.g., parts of speech or word types) but may lack depth of lexical knowledge, including collocations, discipline-specific terminology, and contextual usage. The 13.4% selecting "others" does not substantially alter this trend. The findings imply a gap between metalinguistic awareness and functional lexical competence. Within an ESP context, particularly in pharmacy, systematic development of technical vocabulary and contextualized lexical application is crucial to support academic reading, writing, and professional communication.

Table 9. *Weaknesses in Writing*

Weaknesses in Writing	**Percentage**
Not able to write grammatically correct sentences	43.9%
Not able to write cohesive and coherent paragraphs	19.5%
Not able in paraphrasing	9.8%
Not able to write using uncommon words or academic word	20.7%
Others	6.1%

Table 9 reveals that grammatical inaccuracy constitutes the most prominent weakness in writing, with 43.9% of respondents reporting difficulty in producing grammatically correct sentences. This is followed by limited use of academic vocabulary (20.7%) and challenges in developing cohesive and coherent paragraphs (19.5%), indicating weaknesses at both sentence and discourse levels. Although fewer respondents (9.8%) reported difficulty with paraphrasing, this skill remains critical for academic integrity.

Table 10. *Weaknesses in Speaking*

Weaknesses in Speaking	Percentage
Not able to speak grammatically correct	40.2%
Not able to speak in context	11%
Not able to speak fluently	28.0%
Not able to speak in context fluently	14.7%
Others	6.1%

Table 10 indicates that grammatical inaccuracy is the most significant weakness in speaking, with 40.2% of respondents reporting difficulty in producing grammatically correct utterances. Fluency-related challenges are also evident, as 28.0% acknowledged problems with smooth delivery, and only a small proportion demonstrated contextual fluency. Although 11% reported difficulty speaking in context, this percentage is lower than those struggling with form and fluency, suggesting that communicative intent may be present but not adequately supported by linguistic accuracy. The findings imply that students prioritize meaning over form, yet limited grammatical control and fluency may hinder effective oral communication in academic and professional settings.

Table 11. *Weaknesses in Listening*

Weaknesses in Listening	Percentage
Not able to understand listening material in any context	50.0%
Not able to understand an easy listening material	17.0%
Not able to understand an easy listening material	18.3%
Others	14.7%

Table 11 demonstrates that listening constitutes a major area of difficulty among respondents. Half of the participants (50.0%) reported being unable to understand listening materials in any context, indicating substantial limitations in processing spoken English beyond highly controlled situations. Additionally, 17.0% stated that they cannot easily understand simple listening materials, while 18.3% struggle even to comprehend easy input gradually. These figures suggest that difficulties persist at both basic and more advanced levels of auditory comprehension. The 14.7% selecting "others" does not significantly alter the overall trend.

Table 12. *Weaknesses in Reading*

Weaknesses in Reading	Percentage
Not able to understand all types of reading material	35.4%
Not able to understand the type of short and simple reading material	26.8%
Not able to understand simple reading material little by little	17.0%
Others	20.8%

Table 12 indicates that reading difficulties remain evident across varying levels of text complexity. A substantial proportion of respondents (35.4%) reported being unable to understand all types of reading materials, suggesting limitations in handling diverse or advanced texts. More concerning, 26.8% indicated difficulty even with short and simple texts, while 17.0% struggled to comprehend simple materials gradually. These findings imply that reading challenges are not confined to higher-order comprehension but also affect basic understanding. The 20.8% selecting "others" may reflect additional, unspecified difficulties.

Table 13. *Weaknesses in Grammar*

Weaknesses in Grammar	Percentage
Not mastering Tenses well	59.8%
Not able to use English with a good language structure	29.2%
Others	11%

Table 13 demonstrates that tense mastery constitutes the most significant grammatical weakness among respondents, with 59.8% reporting difficulty in controlling tense usage. This high percentage indicates limited command of temporal and aspectual distinctions, which are essential for clarity and accuracy in academic communication. Additionally, 29.2% acknowledged problems with overall language structure, suggesting broader syntactic challenges beyond tense formation. The remaining 11% selecting "others" may reflect additional grammatical concerns not specified in the categories. Collectively, the findings reveal that grammatical deficiencies are not merely peripheral but central to learners' linguistic limitations. Given the importance of precision in academic and professional discourse, particularly in specialized fields, systematic grammar reinforcement—especially in tense consistency and complex sentence construction—is pedagogically necessary.

Table 14. *Weaknesses in Vocabulary*

Weaknesses in Vocabulary	Percentage
Do not have a lot of vocabulary	45.1%
Do not know the classification of English vocabulary word	35.3%
Do not know the types of vocabulary	9.8%
Others	9.8%

Table 14 indicates that limited lexical repertoire represents the primary vocabulary-related weakness, with 45.1% of respondents acknowledging insufficient vocabulary breadth. This suggests restricted access to varied lexical items, which may constrain comprehension and expression in academic contexts. Furthermore, 35.3% reported limited knowledge of vocabulary classification, reflecting gaps in metalinguistic awareness that may affect word usage and grammatical accuracy. Although only 9.8% identified difficulty with vocabulary types, this does not diminish the broader issue of inadequate lexical depth and range. The remaining 9.8% selecting "others" may indicate additional unspecified challenges. Overall, the findings underscore the need for systematic vocabulary development, particularly in expanding academic and discipline-specific terminology essential for effective communication in specialized fields.

Table 15. *Learning Styles*

Importance Level of Learning Styles							
Respondents	**Learning through hearing**	**Learning through reading**	**Learning through video**	**Learning through picture**	**Learning through hearing and pronunciation**	**Individual Learning**	**Learning in Pairs**
Students	3.23	3.26	3.35	3.16	3.38	3.01	3.23
Graduates	3.10	3.90	3.45	3.30	3.50	3.20	3.15
Lecturers	3.50	4.00	4.00	4.00	4.00	3.50	3.50
Experts	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Average	**3.45**	**3.79**	**3.70**	**3.61**	**3.72**	**3.42**	**3.47**
1 – 1.75 = Not important; 1.76 – 2.50 = Less important							
2.51 – 3.25 = Important; 3.26 – 4.00 = Very important							

Learning style is defined as how a learner behave, think of, interact with, and respond to the learning environment. In psychology, learning sytles composed in three kinds i.e. *visual learners*- process information of the learning materials through their sight whereas they need some visual aids such as illustrations, videos, diagrams and so forth to help them in learning and teaching process; *auditory learners*- process information in the classroom through listening in which they are more likely prefer group discussion or any other kind of listening activity and reading aloud; *kinesthetic learners*- learners who perceive that learning best occurs through moving, doing, and touching (Listyani, 2013).

Another categories learning style was proposed based on Knowles's recommendation in 1982. The categories consist of four kinds i.e. *concrete learner*- type of learners who prefer verbal and visual experiences rather than written works. Also more likely involving themselves in spontaneous activity over routines activity. This type of learners is curious, spontaneous, and risk-taking. They tend to learn through games, pictures, video, working in pairs and group. In addition, they are interested in language use as a communication tool rather than language as a system; *analytical learner*- an independent and confident learners who avoid themselves from group activity. Some presume that this type of learners like to push themselves too hard, hate making mistakes, and think hard before deciding to speak. They prefer to learn grammar, read text books and problem solving activity. Moreover, they work with a great detail; *communicative learner*- type of learners who like to use language in social interaction such as peer activity, group discussion and more likely to learn by talking or listening to English native speakers. Moreover, they like to achieve personal feedbacks and happy to learn even without teacher's guidance; and *authourity-oriented learner*- type of learners who tend to presume teachers as source of authority. They are responsible, dependable, and learn best in traditional classrooms. Also, they prefer their teacher explain everything for them, giving them a clear instruction and letting them to write down everything in their textbook. Moreover, they are more likely to avoid themselves from discussion (Richards et al 2005; Anglistika 2008; Troy M 2013; Listyani 2013).

The information about the respondents' preferences in learning styles is presented in table 17. It depicts that the average score of learning through hearing 3.45; learning through reading 3.79; learning through video 3.70; learning through picture 3.61; learning through hearing and pronunciation 3.72; individual learning 3.42; and learning 3.47.

Table 16. *Learning Goals*

Learning Goals

Respondents	**Continue to the next level**	**Future career**	**Complete study**	**Self-Improvement**	**Visit other country**
Students	3.55	3.66	3.65	3.63	3.58
Graduates	3.60	3.45	3.40	3.55	3.60
Lecturers	4.00	4.00	4.00	4.00	4.00
Experts	4.00	4.00	4.00	4.00	4.00
Average	**3.73**	**3.77**	**3.76**	**3.79**	**3.79**
1 – 1.75 = Not important; 1.76 – 2.50 = Less important					
2.51 – 3.25 = Important; 3.26 – 4.00 = Very important					

Table 18 shows the goal in learning English for Pharmacy. It is illustrated that the position of the total average score refers to the very important category; Continue to the next level 3.73; future career 3.77; complete the study 3.76; self-improvement 3.79; and visit other country 3.79. Based on the table, the higher score refers to self-improvement and visit other country.

According to the interview, student perceived learning English is important since it could help them to achieve their goal. By mastering English, it would be easier to get a job. It's like when you have English skill they will consider to choose you over someone else. (*Dengan menguasai bahasa Inggris, itu akan memudahkan dalam mendapatkan pekerjaan. Jika kita memiliki kemampuan bahasa Inggris, para pemberi lowongan akan mempertimbangkan kita ketika akan melamar sebuah pekerjaan* (Student 2: 02/09/2019).

Addition for Respondent 2 statement, Respondent 1 thought that mastering English could also help her to achieve her dream which she want to go abroad. As stated in her statement. Get success in education is good for now, we can get some achievement. If I and my friends keep improving to master English, it will be easier to get a job someday, moreover in pharmacy. We also can continue our magister in abroad, because I myself dreamed to visit many countries, learn from many people and get success. (*Sukses di bidang pendidikan adalah hal yang baik. Jika saya dan teman saya selalu berusaha meningkatkan kemampuan berbahasa Inggris, itu akan sangat memudahkan saya dalam mencari pekerjaan, khususnya di dunia Farmasi. Selain itu, kami juga dapat melanjutkan pendidikan S2 di luar negeri. Saya sendiri berharap bisa mengunjungi negara lain, belajar dengan banyak orang, dan bisa sukses juga*) (Student 1: 02/09/2019). To sum up the analyzed data, the students' needs is presented below;

The overall findings across Tables 2–14 consistently demonstrate that students possess only fair general English proficiency while simultaneously expressing substantial academic and disciplinary needs. The self-assessment results indicate that reading shows relatively higher competence compared to other skills; however, listening and grammar appear to be the weakest areas. This imbalance suggests that although students can access written information to a certain extent, their overall communicative competence—particularly in processing spoken input and maintaining grammatical accuracy—remains limited.

The analysis of writing strengths and weaknesses further reinforces this pattern. While some students perceive themselves as capable of producing grammatically correct sentences and using academic vocabulary, a much larger proportion report difficulties in sentence-level accuracy. Moreover, very few students identify cohesion and coherence as strengths, indicating challenges at the discourse level. These findings highlight a clear need for structured academic writing instruction that integrates grammar, paragraph organization, paraphrasing skills, and discipline-specific vocabulary relevant to pharmacy.

Similarly, speaking results reveal that students tend to prioritize contextual communication over grammatical correctness. Although many respondents feel able to speak in context, a significant proportion acknowledge weaknesses in grammatical accuracy and fluency. This suggests that students may rely on functional communication strategies but lack linguistic precision. Therefore, there is a pedagogical need to integrate form-focused instruction within communicative speaking activities, particularly those simulating academic presentations, laboratory discussions, and professional interactions in pharmaceutical settings.

Listening appears to be one of the most critical areas of need. A substantial percentage of respondents report difficulty understanding spoken English across contexts, including even simple materials. This indicates limited exposure to authentic auditory input and insufficient listening strategies. Given that pharmacy students must engage with lectures, seminars, and international research presentations, systematic and scaffolded listening practice using authentic academic materials is essential within the ESP curriculum.

Reading findings present a mixed picture. While some students claim to understand various types of texts, a considerable proportion struggle with both simple and complex reading materials. Considering that pharmacy education heavily depends on accessing scientific journals, manuals, and textbooks—mostly published in English—this limitation signals a pressing need for reading strategy training, technical vocabulary development, and genre-based instruction focused on scientific texts.

Grammar and vocabulary findings further clarify students' linguistic needs. The high percentage of respondents reporting difficulty with tense mastery underscores the need for focused grammar reinforcement, particularly in areas crucial for academic writing and research reporting. Similarly, limited vocabulary breadth and insufficient understanding of lexical classification suggest that students require systematic expansion of both general academic and pharmacy-specific terminology.

Importantly, the topic selection results show strong demand for English materials integrated with core pharmacy subjects such as Human Anatomy and Physiology, Pharmacogenomics, Pharmaceutical Technology, and Clinical Biochemistry. This demonstrates that students are aware of the importance of English in accessing global scientific knowledge. However, their current linguistic competence may not adequately support engagement with these specialized domains.

Taken together, the findings clearly indicate that students need a comprehensive, needs-based English for Pharmacy program. Such a program should not only integrate discipline-specific content but also systematically strengthen foundational language skills—particularly grammar, listening, academic vocabulary, and discourse-level writing competence. The alignment between perceived weaknesses and academic demands highlights the urgency of designing an ESP curriculum that bridges the gap between students' current proficiency and the linguistic requirements of their academic and professional future.

The findings clearly indicate that pharmacy students demonstrate a strong need for structured English language support aligned with their academic discipline. Although their overall proficiency is perceived as fair, significant weaknesses in grammar, listening, and vocabulary suggest that their current competence may not sufficiently support the demands of scientific study. Mastery of tense usage, sentence accuracy, and lexical range appears particularly limited, which may hinder students' ability to write laboratory reports, interpret research findings, and communicate professionally.

Listening competence emerges as a critical area of need. A substantial proportion of students report difficulty understanding spoken English across contexts, including simplified materials. Given that pharmacy education increasingly involves exposure to international lectures, webinars, and research presentations, students require systematic training in academic listening strategies, exposure to authentic spoken discourse, and practice with technical terminology in oral form.

Writing proficiency also requires focused intervention. While some students report strengths in grammar and vocabulary, many acknowledge difficulties in producing grammatically accurate sentences and cohesive paragraphs. Academic writing in pharmacy demands clarity, precision, and logical organization, particularly in research reports and case analyses. Therefore, explicit

instruction in discourse organization, paraphrasing, and discipline-specific academic genres is essential.

Reading skills, though relatively stronger than other areas, remain limited when students encounter complex or technical texts. Since pharmacy students must engage with international journals and scientific documentation, they need advanced reading strategies, inferencing skills, and systematic development of technical vocabulary to navigate specialized materials effectively.

Finally, the high demand for English materials integrated with core pharmacy subjects underscores the necessity of a content-based ESP curriculum. Students require English instruction that directly connects to subjects such as pharmacology, biochemistry, and pharmaceutical technology. An integrated, needs-based program that strengthens foundational language skills while embedding discipline-specific content is therefore essential to prepare pharmacy students for academic success and professional engagement in a global context.

CONCLUSION

This study concludes that pharmacy students require English language instruction that is systematically tailored to their specific academic and professional contexts. The findings demonstrate that although students possess basic functional competence, their proficiency remains uneven across language skills, with notable limitations in grammar accuracy, listening comprehension, discourse-level writing, and lexical breadth. At the same time, students express strong demand for English materials integrated with core pharmaceutical subjects, indicating awareness of the central role of English in accessing global scientific knowledge, research publications, and professional communication.

The identified needs particularly emphasize the importance of strengthening students' ability to read and critically interpret scientific texts, write coherent and grammatically accurate laboratory reports and academic papers, and expand discipline-specific vocabulary essential for understanding technical concepts. Furthermore, speaking skills require focused development not only for classroom presentations but also for patient counseling, interprofessional collaboration, and participation in international academic forums. Listening competence must also be enhanced to enable students to comprehend lectures, seminars, and professional discussions delivered in English.

Therefore, the development of an English for Specific Purposes (ESP) curriculum is not merely recommended but pedagogically necessary. Such a curriculum should integrate foundational language skills with authentic pharmacy-related tasks, including analysis of research articles, case studies, drug information leaflets, and simulated patient interactions. A needs-based, content-integrated instructional design will enable students to bridge the gap between their current proficiency and the linguistic demands of their future careers. Ultimately, well-structured ESP-based instructional materials are essential to foster communicative competence, academic literacy, and professional readiness in the increasingly globalized pharmaceutical field.

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ETHICAL STATEMENT

This study was conducted in accordance with the ethical research standards established by the Universitas Islam Negeri Alauddin Makassar and guided by the principles outlined in the Declaration of Helsinki. All participants were informed of the study's objectives, procedures, and their right to voluntary participation. Written or digital informed consent was obtained from every participant prior to data collection. Confidentiality and anonymity were ensured by coding all responses and excluding any personally identifiable information from the analysis and reporting.

The authors confirm that there were no elements of coercion or harm involved in the research process, and participants were free to withdraw from the study at any time without consequences. Ethical approval for this study was granted by the English Education Department, Faculty of Tarbiyah and Teacher Training, UIN Alauddin Makassar. The study upholds integrity,

respects human rights, and contributes responsibly to the advancement of knowledge in English for Specific Purposes (ESP) and pharmacy education.

CRediT AUTHORSHIP CONTRIBUTION STATEMENT

- **Sitti Nurpahmi:** Conceptualization, Methodology, Investigation, Writing original draft.
- **Indah Fadhilah Rahman:** Formal analysis, Data curation, Visualization, Writing review & editing.

Both authors participated in interpreting data, discussing findings, and refining the final version of the manuscript. They have read and approved the published version of this article.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this article. They have no known competing financial interests or personal relationships that could have influenced the research process or the reporting of results. The study was conducted solely for academic purposes, free from external or commercial bias, and the conclusions presented reflect independent and objective analysis.

DATA AVAILABILITY

All data generated or analyzed in this study are included within this published article or are available from the corresponding author upon reasonable request. To maintain participant confidentiality and institutional privacy, raw datasets containing identifiable information are not made publicly available. However, anonymized data, research instruments (questionnaires, interview protocols), and the coding framework used in the analysis can be accessed upon request for academic and non-commercial purposes by contacting the corresponding author.

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