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A NEEDS ANALYSIS OF ENGLISH FOR ANIMAL SCIENCE STUDENTS IN HIGHER EDUCATION

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Abstract

In the era of global scientific advancement, English proficiency has become a fundamental requirement for academic and professional success in Science, Technology, Engineering, and Mathematics (STEM). However, General English (GE) courses often fail to address the specific linguistic needs of Animal Science students. This study aims to analyze the English language learning needs of Animal Science students at UIN Alauddin Makassar as a basis for developing a relevant English for Specific Purposes (ESP) curriculum. A quantitative survey design was employed, involving 30 undergraduate students from various semesters. Data were collected through a structured questionnaire covering students' backgrounds, current proficiency, learners' lacks, learning preferences, professional communication needs, and course expectations. The findings reveal a significant gap between students' current English abilities and the demands of their field. Despite showing high motivation and awareness of the importance of English (Mean = 4.06), students experience difficulties in academic speaking and technical grammar. They also prefer practical, simulation-based learning and express a strong need for technical vocabulary and formal writing skills. These findings suggest the importance of shifting from general English instruction to a context-specific ESP approach. This study contributes to the development of ESP curricula in STEM fields, particularly for Animal Science students.

Keywords: *Needs Analysis; English for Specific Purposes; Animal Science; STEM; English Language Learning*

INTRODUCTION

In today's era of globalization, proficiency in English is considered a very important skill, especially in higher education. This also applies to Animal Science students who are faced with communication needs in the fields of science, technology, engineering, and mathematics (STEM). English is not only an international language, but also the main medium for the dissemination of knowledge and research in various disciplines (Wy & Kurniawan, 2023). Therefore, understanding the need to learn English for Animal Science students is crucial to improving their ability to interact and compete at a global level. With the development of technology and information, English is increasingly used in scientific publications, international seminars, and other digital platforms (Kawakibi & Indrawan, 2024). This creates greater engagement between students and global issues related to Animal Science and agricultural technology. However, in reality, many students still experience difficulties in learning English, especially in the context of the sciences they are studying (Qamariah & Yuliani, 2024). Limitations in the use of English can hinder their

learning process and reduce their ability to explore new information and participate in international research (Farhain et al., 2023).

The problems faced by Animal Science students in relation to English language learning are the focus of this study. This study aims to explore and understand the English language learning needs of Animal Science students, specifically in the STEM field. By identifying the needs and challenges faced by students, it is hoped that more effective and relevant learning strategies can be formulated (Ocktavia & Srisudarso, 2025). This approach aligns with the concept of needs analysis, which emphasizes the systematic identification of learners' requirements as the foundation for designing effective language programs. This is very important, considering that a good understanding of English can open up wider opportunities not only in the academic world, but also in the world of work in the agriculture and Animal Science sectors. The background of this research involves an analysis of higher education curricula in Indonesia, which generally do not fully integrate English language learning in the context of science and technology (Rizky & Amal, 2025). Much of the lecture material is taught in Indonesian, so students are sometimes unfamiliar with scientific terms in English (Idayani & Sailun, 2024). In addition, the lack of resources and facilities for learning English on campus is also a hindering factor. Therefore, surveying the English learning needs of Animal Science students is very important to identify their level of English knowledge and skills and to formulate the necessary improvement measures.

In order to achieve these objectives, this study will follow up by identifying specific areas in which students feel less confident or lack adequate skills. Several important components that will be explored in this survey include reading, writing, listening, and speaking skills in English in the context of their scientific studies (Sulistiyaningsih et al, 2023). According to Long (2005), needs analysis plays a crucial role in identifying both academic and professional language requirements, ensuring that language instruction is closely aligned with learners' real-world contexts. By understanding these components, it is hoped that concrete and targeted recommendations can be made for English language proficiency at the undergraduate level in Animal Science. Finally, this study aims to contribute to the development of teaching materials and learning methodologies for English in higher education, particularly for Animal Science students. By prioritizing a needs-based approach, this study is expected to strengthen students' English language foundations so that they are prepared to face the demands of globalization and contribute significantly to the fields of Animal Science and technology. Through systematic research based on accurate data, this paper is expected to serve as a reference for lecturers and curriculum developers in designing learning programs that are more responsive to student needs.

METHOD

This study employed a quantitative survey design to investigate the English language learning needs of Animal Science students within the context of STEM. A quantitative approach was used to obtain systematic and measurable data on students' perceptions, priorities, and language requirements. The population of this study consisted of undergraduate students from the Animal Science Study Program at UIN Alauddin Makassar, from which 30 students were selected as the sample using purposive sampling. The participants were chosen based on specific criteria, including their enrollment in the program and prior experience in learning English. This sampling technique was appropriate

as needs analysis focuses on a particular group of learners with similar academic and professional goals.

Data were collected through a structured questionnaire consisting of eight sections covering students' backgrounds, English proficiency, learners' lacks, learning preferences, professional communication needs, course expectations, and environmental factors. The questionnaire employed a five-point Likert scale to measure students' perceptions and attitudes. The collected data were analyzed using descriptive quantitative techniques, including frequencies, percentages, and mean scores, to identify general trends in students' English learning needs. The results were then presented in tabular form and interpreted to determine students' target needs, learning needs, and preferences, which served as the basis for proposing implications for ESP curriculum development.

RESULTS AND DISCUSSION

The results and discussion of this study are based on data obtained from a quantitative survey involving 30 students of the Animal Science Study Program at UIN Alauddin Makassar from various semesters. The data were collected through an eight-category questionnaire designed to examine students' English learning needs, including their professional background, current English proficiency, perceived difficulties, learning preferences, and expectations toward an ESP course. The findings are presented using descriptive analysis in the form of frequency and percentage distributions to highlight key areas of need. The following sections discuss the main findings based on each category of the questionnaire.

To provide a clearer understanding of the findings, the research data are presented in the table below.

Table 1. Professional Information of the Learners

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I often use English in my academic or work activities.	0.0%	20.0%	50.0%	20.0%	10.0%
I need English to read and understand academic or professional texts.	0.0%	6.7%	30.0%	46.7%	16.7%
I need English to write reports, papers, or formal correspondence.	3.3%	6.7%	56.7%	23.3%	10.0%
I will use English regularly in my future profession.	3.3%	6.7%	26.7%	33.3%	30.0%
The English I need should include technical vocabulary related to my field.	0.0%	10.0%	33.3%	40.0%	16.7%

The first section outlines the extent to which students currently use English and their expectations for its use in their future professional careers in the field of animal husbandry. The research findings indicate that the majority of students moderately to strongly agree that English is necessary for academic and professional purposes. Most respondents expressed a need to read academic or professional texts and to use English in their future careers. Furthermore, students generally agree that English instruction should include technical vocabulary relevant to their fields.

Table 2. Personal Information of the Learners

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I have had positive experiences learning English previously.	0.0%	10.0%	36.7%	43.3%	10.0%
My cultural background influences how I learn English.	0.0%	10.0%	40.0%	30.0%	20.0%
I take this course to improve my English for my field of study or work.	0.0%	6.7%	30.0%	40.0%	23.3%
I expect this course to help me communicate better in my field.	0.0%	0.0%	30.0%	43.3%	26.7%
I enjoy learning English and consider it important.	0.0%	0.0%	40.0%	40.0%	20.0%
I feel confident when using English.	0.0%	3.3%	46.7%	30.0%	20.0%
I prefer learning through discussion or group work.	0.0%	10.0%	30.0%	46.7%	13.3%
I often find it difficult to understand English grammar.	0.0%	3.3%	33.3%	46.7%	16.7%
I want to learn more about the culture of English speakers.	0.0%	0.0%	23.3%	53.3%	23.3%
I am motivated to master English for my future.	0.0%	0.0%	26.7%	40.0%	33.3%

In this section, the respondents' psychological background, learning motivation, learning style preferences, as well as internal obstacles such as self-confidence and grammatical difficulties, are described. The findings indicate that students generally hold positive attitudes toward learning English and recognize its importance for their academic and professional development. Most respondents expressed motivation to improve their English skills and expected the course to support effective communication in their field. However, confidence levels varied, with many students remaining neutral about their current ability.

Table 3. Learners' English Proficiency

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
My speaking ability is sufficient for daily conversation.	3.3%	6.7%	46.7%	30.0%	13.3%
I can understand lectures or presentations in English.	3.3%	23.3%	36.7%	26.7%	10.0%
I can read and understand academic or professional texts.	0.0%	23.3%	33.3%	26.7%	16.7%
I can write reports, essays, or formal emails in English.	3.3%	20.0%	40.0%	23.3%	13.3%
I have sufficient vocabulary related to my field.	0.0%	13.3%	50.0%	20.0%	16.7%
My English pronunciation is clear and understandable.	3.3%	13.3%	43.3%	26.7%	13.3%

The third section presents respondents' self-evaluation of the four main skills (listening, speaking, reading, and writing) and mastery of basic vocabulary. The results reveal that students perceive their overall English proficiency as moderate. While some respondents agreed that they are capable of speaking, reading, and writing in English, a

substantial number remained neutral, particularly in academic and professional contexts. This suggests that many students are still developing their language competence.

Table 4. Learners' Lacks

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I find it difficult to speak fluently in academic or professional contexts.	0.0%	13.3%	23.3%	53.3%	10.0%
I have difficulty understanding native English speakers.	0.0%	6.7%	33.3%	50.0%	10.0%
My writing ability is not sufficient for academic texts.	0.0%	10.0%	30.0%	43.3%	16.7%
I need to improve my grammar and vocabulary for my studies/work.	3.3%	0.0%	23.3%	50.0%	23.3%
There is a large gap between my current English ability and the field demands.	0.0%	3.3%	43.3%	40.0%	16.7%

This section is a crucial sub-point as it identifies the gaps or specific deficiencies perceived by students, particularly in academic communication and understanding of native speakers. The data indicate that most students experience difficulties in using English for academic and professional purposes. Speaking fluently, understanding native speakers, and writing academic texts were reported as major challenges. Additionally, many respondents agreed that there is a noticeable gap between their current English proficiency and the demands of their field.

Table 5. Language Learning Information

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I learn better through discussion and group work.	3.3%	3.3%	40.0%	36.7%	16.7%
I prefer learning through real activities and simulations.	0.0%	3.3%	23.3%	53.3%	20.0%
I use videos, apps, or the internet to learn English.	0.0%	3.3%	40.0%	43.3%	13.3%
I regularly review English lessons outside class.	0.0%	3.3%	60.0%	26.7%	10.0%
I expect lecturers to use interactive teaching methods.	0.0%	0.0%	26.7%	46.7%	26.7%
I understand better when lecturers provide real examples.	0.0%	3.3%	20.0%	50.0%	26.7%
I enjoy learning activities that involve hands-on practice.	0.0%	0.0%	23.3%	50.0%	26.7%

This section presents the results of respondents' instructional method preferences, ranging from the use of digital media to the desire for more interactive and practical teaching methods. The results show that students tend to prefer interactive and practice-based learning activities. Most respondents agreed that group discussions, simulations, real-life examples, and practical activities help them understand English more effectively. There was also a strong expectation for interactive teaching methods and active student involvement.

Table 6. Professional Communication Information

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I need to learn professional communication in my field.	3.3%	0.0%	20.0%	63.3%	13.3%
I need to learn how to write formal documents in English.	0.0%	0.0%	26.7%	53.3%	20.0%
I need to use polite and formal English with superiors or clients.	0.0%	6.7%	16.7%	53.3%	23.3%
I need to master technical terms in my field.	0.0%	0.0%	23.3%	56.7%	20.0%
I need to understand how professionals communicate in English.	0.0%	0.0%	26.7%	60.0%	13.3%

In this section, the researcher focuses on the need for formal communication, such as the ability to write official reports and the use of technical terms in the STEM work environment. The findings demonstrate a strong need for English in professional communication. Most students agreed on the importance of learning formal and polite language, technical terminology, and professional writing skills. Respondents also expressed the need to understand how professionals in their field communicate using English.

Table 7. ESP Course Needs

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I expect the course to help me communicate effectively in my field.	0.0%	0.0%	26.7%	53.3%	20.0%
The course should focus on skills relevant to my field.	3.3%	0.0%	13.3%	63.3%	20.0%
I want practical materials relevant to the workplace.	0.0%	0.0%	10.0%	66.7%	23.3%
Course topics should reflect real-world situations.	0.0%	0.0%	13.3%	70.0%	16.7%
I believe this ESP course will benefit my future career.	0.0%	0.0%	16.7%	60.0%	23.3%

Students' expectations of the English for Specific Purposes (ESP) course are explained in this section, including the relevance of the topics to the real world and their benefits for their future. The results indicate that students have clear expectations regarding the ESP course. Most respondents strongly agreed that the course should focus on practical, field-related skills and real-world contexts. They also believed that the ESP course would be beneficial for their future careers.

Table 8. Environmental Situation

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The classroom environment supports English learning.	3.3%	0.0%	43.3%	36.7%	16.7%
Facilities and learning resources are adequate.	0.0%	0.0%	43.3%	43.3%	13.3%
The English class schedule suits my learning time.	0.0%	3.3%	46.7%	33.3%	16.7%
The duration of each meeting is sufficient.	0.0%	6.7%	40.0%	33.3%	20.0%

I have opportunities to practice English outside class.	0.0%	3.3%	36.7%	33.3%	26.7%

The last section describes external supporting factors, such as the adequacy of classroom facilities, class schedules, and opportunities for students to practice English in their environment. The findings show that the learning environment is generally perceived as supportive, although some aspects received neutral responses. Students moderately agreed that classroom conditions, facilities, and scheduling support English learning. Opportunities to practice English outside the classroom were also reported, though not consistently by all respondents.

The findings of this study reveal a noticeable gap between the current English proficiency of Animal Science students and the academic as well as professional demands they are expected to meet. Although students demonstrate strong awareness of the importance of English for accessing scientific literature and future career development, they still experience substantial difficulties in productive skills such as academic speaking and formal writing. This condition reflects the concept of learners' lacks, referring to the discrepancy between learners' existing abilities and the competencies required in the target context (Hutchinson & Waters, 2010). Similar findings have been reported in ESP studies within applied science disciplines, indicating that General English instruction alone is insufficient to address discipline-specific communication needs (Hossain, 2013). Therefore, a targeted ESP approach is essential to bridge this gap and support students' academic and professional readiness.

In addition, the results highlight the urgency of technical literacy and formal communication skills in English among Animal Science students. As part of the STEM domain, animal science requires students to engage with specialized terminology, research articles, and professional documentation. Hyland (2000) emphasize that ESP learners must be equipped with language competencies that directly reflect the discourse practices of their field. This aligns with Hyland's (2022) view that ESP functions as a tool for effective participation in disciplinary communities rather than general language mastery. Consequently, English instruction for Animal Science students should prioritize skills such as interpreting scientific texts, writing technical reports, and using formal language appropriately in professional interactions.

Furthermore, students' preferences for practical, interactive, and context-based learning indicate a strong alignment with learner-centered ESP principles. The tendency toward group discussions, simulations, and real-world examples suggests that students learn more effectively when language instruction mirrors authentic professional situations. Zahid Javid (2015) argues that ESP teaching should actively involve learners and adapt instructional strategies to their specific goals and learning styles. Similarly, Chovancová (2014) notes that learners' perceptions and preferences play a crucial role in shaping effective ESP course design. These findings imply that an ESP curriculum for Animal Science students should integrate task-based and experiential learning activities to enhance engagement and facilitate meaningful language use.

CONCLUSION

This study concludes that Animal Science students at UIN Alauddin Makassar demonstrate a strong awareness of the importance of English for their future professional engagement in the STEM field. However, despite this awareness, students continue to

experience considerable difficulties in productive language skills and grammatical accuracy. The findings underline the necessity of developing an ESP-oriented curriculum that emphasizes technical livestock-related vocabulary, formal academic writing, and professional communication skills. Furthermore, students clearly favor interactive and practice-based learning approaches that reflect real-world professional contexts rather than purely theoretical instruction. Overall, the results confirm a substantial gap between students' current English proficiency and the linguistic demands of their future academic and professional environments, highlighting the importance of implementing a needs-based ESP program in the Animal Science curriculum.

Based on the findings, it is suggested that English instruction for Animal Science students should be redesigned by adopting an English for Specific Purposes (ESP) approach that is closely aligned with their academic and professional needs. The curriculum should prioritize the development of technical vocabulary, academic speaking, and formal writing skills, as these were identified as major areas of difficulty. In addition, lecturers are encouraged to implement interactive and practice-based teaching methods, such as simulations, group discussions, and real-world tasks, to enhance students' engagement and communicative competence. Institutions should also provide adequate learning resources and opportunities for students to practice English beyond the classroom. Furthermore, future researchers are recommended to involve a larger sample size and incorporate mixed-method approaches to gain deeper insights into students' language needs and learning experiences.

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