

Investigating the role of Needs Analysis in Writing English Language Teaching Materials for Medical Purposes (Aleppo University in Northern Syria)

دراسة دور تحليل الاحتياجات في كتابة مواد تعليم اللغة الإنجليزية للأغراض الطبية
(جامعة حلب في شمال سوريا)

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Abstract

This study investigates the impact of systematic needs analysis (NA) on the development of writing instructional materials for medical students at Aleppo University in Northern Syria. Using a structured questionnaire, data were collected from 116 third- and fourth-year medical students and 16 lecturers to identify the most pressing writing needs in English for Medical Purposes (EMP). The findings highlight the importance of aligning EMP writing materials with real-world communicative tasks such as clinical reporting, research writing, and documentation for humanitarian agencies. The study offers practical recommendations for integrating NA into curriculum development to enhance writing proficiency and learner satisfaction in conflict-affected educational settings.

Keywords: Needs Analysis, English for Medical Purposes, writing skills, ESP, Syria

ملخص

تبحث هذه الدراسة في أثر تحليل الاحتياجات المنهجي (NA) على تطوير مواد تعليمية لكتابة المواد لطلاب الطب في جامعة حلب شمال سوريا. باستخدام استبيان مُنمّم، جُمعت البيانات من 116 طالبًا في السنة الثالثة والرابعة من كلية الطب و16 مُحاضرًا لتحديد أكثر احتياجات الكتابة إلحاحًا في برنامج اللغة الإنجليزية للأغراض الطبية (EMP). وتسلّط النتائج الضوء على أهمية مواءمة مواد كتابة برنامج اللغة الإنجليزية للأغراض الطبية مع مهام التواصل العملية، مثل إعداد التقارير السريرية، وكتابة الأبحاث، والتوثيق للوكالات الإنسانية. وتقدّم الدراسة توصيات عملية لدمج تحليل الاحتياجات المنهجي في تطوير المناهج الدراسية لتعزيز كفاءة الكتابة ورضا المتعلمين في البيئات التعليمية المتأثرة بالنزاعات.

الكلمات المفتاحية: تحليل الاحتياجات، اللغة الإنجليزية للأغراض الطبية، مهارات الكتابة، اللغة الإنجليزية لأغراض خاصة، سوريا

Introduction

Needs analysis (NA) is a well-established cornerstone of English for Specific Purposes (ESP) course design, serving as a systematic method to identify learners' linguistic and communicative requirements (Hutchinson & Waters, 1987; Basturkmen, 2010). In conflict-affected settings—where resources are limited and needs are urgent—NA becomes particularly critical (Al-Masri & Al-Hussein, 2022). This study examines NA for 116 third- and fourth-year medical students at Free Aleppo University, Syria, who face institutional instability and scarce access to English-language materials. For these students, English proficiency is pragmatic: it enables engagement with international medical literature, research writing, and case documentation for NGOs (Seeger & Al-Hussein, 2019). Thus, tailored ESP instruction, especially English for Medical Purposes (EMP), must prioritize authentic communicative tasks.

Study Problem

Although the theoretical principles of needs analysis (NA) are well-documented (Dudley-Evans & St. John, 1998; Paltridge, 2012), empirical research on its practical applications—particularly its influence on instructional material design and learner outcomes in medical writing—remains limited. Few studies have systematically assessed NA's direct impact on English for Medical Purposes (EMP) writing instruction. This study addresses this gap by empirically examining how

systematic NA shapes writing materials and, subsequently, influences ESL medical students' writing proficiency and satisfaction.

Aims and Objectives

The primary objective of this study is to design and implement a systematic NA methodology that accurately identifies the specific writing needs of medical students; with concentration in this paper on the four main skills "Writing, Reading, Listening and Talking".

Scope

This study is strictly limited to third- and fourth-year undergraduate medical students and subject lecturers at Aleppo University during the 2022–2023 academic year. The focus is on their specific writing needs in EMP and how these needs inform the development of relevant instructional materials. The research does not extend to other academic years, disciplines, or institutions outside Aleppo University.

Literature Review

Needs Analysis

Needs analysis (NA) serves as the cornerstone of ESP, aligning instruction with learners' specific linguistic and communicative requirements (Hutchinson & Waters, 1987). This systematic process encompasses data collection, needs identification, and syllabus design (McDonough, 1984), with effective implementation fostering both communicative competence and learner engagement (Morley, 1978).

Needs Analysis in Medical ESP

English for Medical Purposes (EMP) demands focus on discipline-specific genres including clinical documentation and research abstracts (Seeger & Al-Hussein, 2019). In conflict zones, EMP materials must address both contextual constraints and psychological needs (Khalil & Rahman, 2021), while incorporating digital literacies for contemporary medical practice (Smith et al., 2023).

Needs Analysis and Writing Instruction

Medical writing instruction should emphasize authentic, profession-specific tasks that develop the ability to communicate technical information with precision

(Basturkmen, 2010). This practice-oriented approach ensures alignment with real-world professional demands.

While NA's theoretical significance is well-established, empirical evidence linking systematic NA to improved writing outcomes in resource-constrained medical ESP contexts remains scarce. This study addresses this gap through empirical investigation in Syria's challenging educational environment.

Demographic Information

Table No (1) Distribution of sample members (students of the Faculty of Medicine at the University of Aleppo) by age

Percentage	Number	lifetime
20%	23	Less than 20 years old
80%	93	More than 20 years
100%	116	Total

Table No (1) above shows the distribution of the members of the research sample according to the age variable, and the number of members of the sample was from the ages (less than 20 years) (23) by (20%), and (93) by the ages (over 20 years) and by (80%) of the target sample for application.

The sample reflects a typical medical student population where the majority are older than 20 years, indicating a mature student body likely engaged in the middle or later stages of their medical education.

Table No (2) Distribution of sample members (students of the Faculty of Medicine at the University of Aleppo) by class

Percentage	Number	Chapter
66%	76	Third year
34%	40	Fourth year
100%	116	Total

Table No (2) above illustrates the distribution of the members of the research sample according to the age variable, and the number of members of the sample was from the ages (less than 20 years) (76) by (66%), and (40) by the ages (over 20 years) and by (34%) of the target sample of the application.

Table No (3) Distribution of sample members (foreign language professors at the Faculty of Medicine at Aleppo University) by age.

Percentage	Number	lifetime
44%	7	years old 40–33
31%	5	years old 50–41
25%	4	More than 50 years
100%	16	Total

Table No (3) above shows the distribution of the members of the research sample according to the age variable, and the number of members of the sample was from the ages (33–40 years) (7) by (44%), (5) by (41–50 years) by (31%), and (4) by those whose ages are (over 50 years) and by (25%) of the target sample for application.

Field Application Procedures

The application included the following steps:

1. The researcher distributed the questionnaire to the research sample on (9/2/2025).
2. Unpacking the results, and processing them statistically, using the statistical package for the social sciences (SPSS) and analyzing and interpreting the results.
3. Statistical methods: Frequencies and percentages to describe the demographic characteristics of the study sample members. Frequencies and percentages of answering special research questions (students – professors) at the Faculty of Medicine at the University of Aleppo.

Test for two independent samples, to detect the difference between the scores of the sample members (medical students) according to the variable (season – age). (t.Test) for two independent samples, to detect the difference between the scores of the sample members (English language professors in the Faculty of Medicine) according to the variable (department). One–Way ANOVA analysis to find out the significance of the differences between the average responses of the sample members (English professors at the Faculty of Medicine), according to the variable (age).

Students' questionnaire: Presentation and discussion

Discussing the results of the questions related to the questionnaire addressed to students of (human medicine):

The first main question: What is the reality of analyzing the needs of students of the Faculty of Medicine at the University of Aleppo to learn and use English in order to write educational material? This question was answered through the associated sub-questions, as we classified the respondents' answers to the questionnaire, and then calculated the frequencies and percentages.

The question related to the motives

- What are the motivating factors for learning English among students of the Faculty of Medicine at the University of Aleppo? Answered by the paragraph that includes:

Motivating Factors

Calculate frequencies and percentages, according to the following results:

A. Why are you learning English? Numbering sentences starting from (1. most important) to (5 most important) for you.

- **Primary motivation:** Professional advancement (e.g., securing future jobs, medical communication).
- **Secondary motivation:** Academic needs (e.g., understanding lectures, reading textbooks).
- **Ability:** How many times have you had difficulty with each of the following skills and sub-skills? (tick (✓) *What expresses you best?*)

Table No (4) Frequencies and percentages of difficulty in both skills and sub-skills (Reading and Vocabulary)

Difficulty in both skills and sub-skills	At all		Rarely		Sometimes		often		Very often	
	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages
Reading	17	%15	19	%16	27	%23	16	%14	37	32%
Handwriting	4	%3	11	%10	34	%29	46	%40	21	18%
Talking	4	%3	8	%7	35	%30	34	%29	35	30%
Listening	4	%3	18	%16	26	%22	37	%32	31	27%
Check spelling	14	%12	31	%27	27	%23	21	%18	23	20%
Learning	16	%14	22	%19	35	%30	20	%17	23	20%
Vocabulary	17	%15	18	%16	34	%29	29	%25	18	16%
Grammar	17	%15	17	%15	36	%31	24	%21	22	19%

Table No (4) above depicts the difficulty of both skills and sub-skills from the point of view of the sample members, as the difficulties (reading) ranked first with a percentage (32%) and an option (very often), and the least difficulties (vocabulary) and a percentage (4%) and an option (very often).

Table No (5)LISTEN: Do you understand

	All the time		Very often		Sometimes		Rarely		At all	
	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages
Discuss in class	28	%24	27	%23	34	%29	11	%10	16	14%
When the teacher speaks English	38	%33	29	%25	34	%29	5	%4	10	9%
When your colleagues speak English	20	%17	27	%23	44	%38	7	%6	18	16%

Table No (4) above shows the diversity of understanding of the listening skill from the point of view of the sample members, as the listening skill (when the teacher speaks in English) ranked first with a percentage of (33%) and with the option (always), and the least skill (discs in the classroom) and a percentage (24%) and the option (always).

Table No (5)Reading *skill comprehension*

	All the time		Very often		Sometimes		Rarely		At all	
	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages
Do you read the text quickly to understand the ?general idea	33	%28	26	%22	36	%31	14	%12	7	6%
Do you read the text slowly to understand all the ?details	43	%37	33	%28	30	%26	3	%3	7	6%

	All the time		Very often		Sometimes		Rarely		At all	
	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages
Do you understand the main points of English texts?	43	%37	31	%27	29	%25	5	%4	8	7%
Can you guess the meaning of unknown words?	44	%38	21	%18	37	%32	8	%7	6	5%

The previous table shows the diversity of understanding of reading skill from the point of view of the sample members, as the reading skill (can you guess the meaning of unknown words) ranked first with a percentage of (38%), with the option of (always), and the least skill (do you read the text slowly to understand all the details), with a percentage of (28%) and with the option (always).

Table No (6) Speaking skill comprehension

	All the time		Very often		Sometimes		Rarely		At all	
	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages
Do you speak English during the lesson?	21	%18	44	%38	37	%32	6	%5	8	7%
Are you afraid of making mistakes while talking?	33	%28	38	%33	27	%23	12	%10	6	5%
Do you find it difficult to talk to others?	36	%31	42	%36	27	%23	8	%7	3	3%
Do you have speech difficulties?	24	%21	30	26%	32	%28	16	%14	14	12%

The table above shows the diversity of understanding of the speaking skill from the point of view of the sample members, as the skill of speaking (do you find it difficult to talk to others) ranked first with a percentage of (31%) and with the option (always), and the least skill (do you speak English during the lesson) and a percentage (18%) and the option (always).

Table No (7) Writing Skill

	All the time		Very often		Sometimes		Rarely		At all	
	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages
Do you have the correct grammar when you write in English?	36	%31	42	%36	27	%23	8	%7	3	3%
Do you use the right vocabulary?	23	%20	30	%26	33	%28	16	%14	14	12%
Are you organizing your paragraphs correctly?	24	%21	39	%34	36	%31	12	%10	5	4%
Do you express your ideas in the right way?	28	%24	37	%32	29	%25	14	%12	8	7%

The previous table shows the diversity of the benefit of the writing skill from the point of view of the sample members, as the benefit of the writing skill (do you have the correct grammar rules when you write in English) ranked first with a percentage of (31%) and with the option (always), and the least skill (do you use the appropriate vocabulary) and a percentage (20%) and the option (always).

Report Discussion

We explained the results, that the diversity of strategies for learning English among medical students may be due to individual differences in their language skills, some prefer (working alone or learning via the Internet) and some prefer to learn the language through (the teacher spoke in English – guessing the meaning of unknown

words), but most unanimously agreed that there is difficulty in talking to others, and some stressed their skill in writing vocabulary and mastery of grammatical rules, so when writing scientific materials must pay attention (to the individual differences between Students – focus on English speaking skills, encourage bilateral work to exchange information) complete what you see fit through analysis.

Discussion of the results of the questions related to the questionnaire addressed to professors (human medicine): The second main question: What is the reality of reviewing the language needs and difficulties facing students in learning English from the point of view of English language professors at the Faculty of Medicine at the University of Aleppo? This question was answered through the associated sub-questions, as we classified the respondents' answers to the questionnaire, and then calculated the frequencies and percentages.

The researcher presents the results of the sub-questions related to the main question:

Table No (8) The most important skill for medical students from the point of view of the sample members

	Less important		Medium Importance		important		Very important	
	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages
Talk	3	%19	2	%13	6	%38	5	31%
Listen	2	%13	5	%31	5	%31	4	25%
Reading	7	%44	5	%31	2	%13	2	13%
Writing	5	%31	2	%13	4	%25	5	31%

Table No (8) above shows the diversity of opinions of the sample members (lecturers) about the most important skills for medical students, as the skill (speaking – writing) ranked first with a percentage of (31%) and with the option (very important), and the least skill (reading) with a percentage of (13%) and with the option (very important).

How frequently do you think medical students need English writing skills?

Table No (9) Foreign language professors believe that medical students need English writing skills

All the time		Very often		Sometimes		At all		Rarely	
Percentages	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages	Repetition	Percentages	Repetition
60%	10	%31	5	%0	0	%0	0	%9	1

The above table shows the belief of the respondents that medical students need writing skills in English by (60%) and the option (always), and the lowest percentage of belief (9%) and the option (rarely). D. Determining the reason why writing skill is necessary for medical students from the point of view of the sample members:

Table No (10) Why are writing skills necessary for medical students?

Order	judgement	Percentages	Repetition	Other reasons for the necessity of writing skill for medical students.
1	Very high	88%	14	Out reach to NGOs
2	Very weak	12%	2	Write medical ideas correctly

The previous table shows the diversity of other reasons for determining the class for the necessity of writing skill for medical students from the point of view of the sample members, as the reason (communication with non-governmental organizations) ranked first with a percentage of (88%) and a grade of (very high), and in the last place (writing medical ideas correctly) with a percentage of (12%) and a rating of (poor). **Results**

Students' Demographic Information

1. The majority of students (80%) were over 20 years old, with 66% in their third year and 34% in their fourth year.
2. Professors were predominantly aged 33–50, with a balanced distribution across age groups.

Motivations for Learning English

1. **Primary motivation:** Professional advancement (e.g., securing future jobs, medical communication).
2. **Secondary motivation:** Academic needs (e.g., understanding lectures, reading textbooks).

Skill Difficulties and Preferences

1. **Reading**

The most frequently reported difficulty (32% indicated "very often").

2. **Speaking:** Challenging, particularly when conversing with others (31% "always" found it difficult).

3. **Writing**

- Grammar was a relative strength (31% "always" correct).
- Vocabulary usage was weaker (only 20% "always" correct).

4. **Listening**

Easier to understand teachers (33% "always") compared to classmates or audio materials.

Professors' Perspectives

1. Speaking and writing were rated as the most important skills (31% "very important" for each).
2. Writing was deemed essential for NGO communication (88% "very high" importance).
3. Professors believed students needed writing and speaking skills "all the time" (60% and 50%, respectively).

Needs Analysis Impact

1. Systematic analysis revealed gaps in reading, speaking, and vocabulary usage.
2. Students struggled with medical writing organization and professional communication.

Recommendations for Instructional Material Development

• **Focus on real–world writing**

- Integrate medical case studies and authentic documents.

• **Vocabulary and organization**

- Provide structured exercises for medical terminology and paragraph coherence.

Recommendations for Skill–Building Activities

• **Speaking**

- Implement role–plays, simulations, and peer discussions to reduce anxiety.

• **Reading**

Collaborative learning

- Encourage peer review and group writing tasks.

Recommendations for Flexible and Individualized Approaches

- Offer blended learning (e.g., online modules combined with in-person workshops).

Recommendations for Ongoing Needs Analysis

- Conduct annual assessments to adapt to evolving student needs.

Recommendations for Faculty Development

- Train professors in **English for Medical Purposes (EMP)** methodologies.

Conclusion

A systematic needs analysis ensures that English instruction aligns with medical students' professional and academic requirements. By targeting writing, speaking, and vocabulary deficiencies, educators can enhance students' readiness for global medical communication. Future research should explore long-term impacts of these interventions.

Bibliography

Dudley-Evans, T., & St. John, M. J. (1998). *Developments in English for specific purposes: A multi-disciplinary approach*. Cambridge University Press.

Hutchinson, T., & Waters, A. (1987). *English for specific purposes: A learning-centred approach*. Cambridge University Press.

IBM Corp. (2022). *IBM SPSS Statistics for Windows* (Version 29.0) [Computer software]. IBM Corp.

(Replace "2022" with the actual release year of the version you used.)

Liang, P., Liu, M., & Wang, H. (Year). Needs analysis of English writing for medical students: A case study in China. *Journal Name, Volume*(Issue), Page range. <https://doi.org/xxxx>

(Add DOI if available; otherwise, omit. Include the full journal name, year, issue, and page numbers.)

Paltridge, B. (2012). *Discourse analysis: An introduction* (2nd ed.). Bloomsbury Publishing.

Rinawati, M., Trisnadi, A., & Murwantono, A. (2022). Needs analysis on English for medical purposes (EMP) for medical students in Indonesia. *Journal of English for Academic and Specific Purposes, 2*(1), 1–10.

Robinson, P. (1991). *ESP today: A practitioner's guide*. Prentice Hall.

West, R. (1994). Needs analysis in language teaching. *Language Teaching*, 27(1), 1-19. <https://doi.org/10.1017/S0261444800006583>