

Diagnosing the EAP needs of Turkish medical students: A longitudinal critical needs analysis

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Abstract

This study uses a longitudinal critical needs analysis to diagnose the English for academic purposes (EAP) needs of Turkish medical students seeking proficiency in medical English and contribute to needs analysis methodology. The data were collected from medical students and specialists. To obtain valid and reliable information about medical students' needs, five types of instruments were used: ethnographic methods, including sustained observation and participation in a research setting; reflective journals; and a questionnaire and in-depth interview. The questionnaire design was based on essays collected from the students during their study, and the items were constructed from the students' own words. To the best of my knowledge, this study is the first attempt in the literature to triangulate both methods and data with a focus on critical pedagogy to diagnose EAP needs. The findings are the result of the triangulation of data and methodology to ensure the reliability and validity of the findings. A total of 525 subjects participated in the research (186 participants in the pilot study and 339 participants in the main study). The findings revealed medical students' expectations of their English for specific purposes (ESP) instructor, students' shortcomings, and the problems and strategies they use while learning medical English. The interview data analysis sought to determine whether higher education students can be a reliable source to consult for their own educational needs in higher education. The methodology followed here can be replicated in other mainstream classrooms.

Keywords: EAP, medical English, critical needs analysis, longitudinal study.

Resumen

Diagnosticando las necesidades de IFA de los estudiantes de medicina turcos: un estudio longitudinal

El propósito de este estudio es diagnosticar las necesidades de inglés para fines académicos (IFA) de los estudiantes de medicina turcos en relación al inglés médico. Se empleó un análisis continuo de necesidades fundamentales para identificar las necesidades. Los datos fueron obtenidos de estudiantes de medicinas y especialistas del campo de la medicina. Para obtener una imagen válida y fiable de las necesidades de los estudiantes de medicina, se usaron tres tipos de instrumentos diferentes de colección de datos: métodos etnográficos, incluyendo observación dentro de las aulas y diarios reflexivos, así como un cuestionario y una entrevista. Se debe destacar que el cuestionario se diseñó a partir de redacciones de los estudiantes de medicina en el contexto del estudio, así que las preguntas se basan en los enunciados de los mismos estudiantes. Los resultados son el resultado de triangular los datos y un método para garantizar la fiabilidad y validez de los resultados. Un total de 525 personas participaron en el estudio, 186 participantes en un estudio piloto y 339 participantes en el estudio principal. Los resultados revelaron las expectativas que tenían los estudiantes de medicina de los instructores de inglés para fines específicos (IFE), las deficiencias y problemas de los estudiantes y los métodos y estrategias que usan para aprender inglés médico. El análisis de los datos de las entrevistas abordó la pregunta de si los estudiantes pueden ser una fuente fiable a la que consultar acerca de las necesidades docentes en la educación superior. El procedimiento seguido aquí puede reproducirse en otras aulas convencionales.

Palabras clave: IFA, inglés médico, estudio longitudinal, análisis crítico de necesidades.

1. Introduction

English for specific purposes (ESP) instruction has flourished as a specific, dynamic discipline within the field of English language teaching. ESP employs a tailored-to-fit instruction (Belcher, 2006) and highlights practical application. Because General English does not meet learners' specific language needs, ESP can provide valuable insight into language teaching. English for academic purposes (EAP) is a branch of ESP and English for medical purposes (EMP), the instruction discussed in this study. EMP refers to "the teaching of English for doctors, nurses, and other personnel in the medical professions" (Maher, 1986: 112).

In EAP courses, needs analysis (NA) is the fundamental, continuous process of revising the objectives and course design to improve effectiveness (West, 1994; Richards, 2001; Basturkmen, 2010). Upton (2012) suggests that students may have different needs that influence their motivation and the effectiveness of their learning. NA can be used to measure students' needs with "precision and accountability" (Hyland, 2012: 12). Several empirical needs analyses have been conducted in the literature (see, for instance, Basturkmen 1998; Holme & Chalauisaeng 2006; Evans & Green, 2007; Bosuwon & Woodrow 2009; Huang, 2010). Because the current study addresses the EMP needs, only relevant studies in similar contexts are discussed. In their descriptive study Chia et al. (1999) criticised English courses in Taiwan because they had been developed without conducting NA. They investigated the English needs of college students in a medical context to describe the perceptions of medical students and faculty members and identify the students' language needs. The survey included questions to determine the importance of English to the students, their needs concerning English skills and their suggestions for developing an English programme based on the results. The study included 349 medical students and 20 faculty members in the medical programme. Two questionnaires were modelled on instruments in the literature. The results revealed that the most frequently perceived need was listening instruction. Faculty members noted a need for listening skills that would improve one's ability to understand daily conversation (59.9%), radio and TV programmes (30.7%) and lectures (8%). When reporting on their reading, speaking and writing skills, most of the students focused on their desire to be able to read newspapers and magazines, conduct everyday conversations and write reports and research papers. Shi, Corcos and Storey (2001) conducted an NA to develop an English course for medical students that was limited to speaking skills. The course used transcripts of videos and audio recorded during hospital ward teaching sessions in Hong Kong. The study analysed the discourse in the recorded teaching sessions to determine how lecturers guided students in their clinical training; to identify problems in student-lecturer dialogues as spoken discourse; and to develop relevant materials and tasks based on the results of the analysis. The researchers focused on language errors that led to communication problems to develop explicit tasks. The data were obtained through observation and by videotaping the students' performance during ward teaching. Clinical training textbooks were also examined for discourse moves (like Bates, 1995). Five ward teaching sessions were videotaped and one session was audiotaped; in total, six hours of data were

collected. The data included grammatical errors, interruptions, repetition, pauses and unfinished utterances. Discourse analysis revealed that tutors guided students while they presented cases, conducted physical examinations and made diagnostic hypotheses that required the ability to match registers, recited the chronology of a medical history using appropriate linking words and tenses and described examination techniques.

1.1. Remaining methodological issues

Previous studies have contributed valuable insights, but several issues seem to have been overlooked. Empirical studies on NA have been affected by limitations, particularly concerning methodology, which is crucial to ensure the reliability and validity of the findings. The validity and reliability of the instruments used and the studies' results are rarely discussed and are often under-researched (Van Hest & Oud-de Glas, 1990; Long, 2005). Moreover, the current NA literature indicates that there is little research on improving data collection methods. Few studies have used triangulation (see Jasso-Aguilar, 1999), and insiders' perceptions of their own needs tend to be overlooked, though data can be triangulated to encompass on both insiders' (students and academics) and outsiders' (experts) views. Likewise, West (1994) criticises lack of attention paid to learners as a source of NA information. Although students' participation is emphasised, questionnaire items tend to be constructed from an outsider's perspective, which is problematic. Kennedy, Fisher and Ennis (1991) studied critical thinking in education and criticised education systems for their lack of critical thinking and critical pedagogy. They suggest that training in critical thinking is important and should be the primary task of education worldwide (Pennycook, 1999). However, the literature generally indicates that students are not prepared to fully participate in a democratic society and do not have the critical thinking skills necessary to meet the demands of the world because they lack higher order thinking abilities. In a significant contribution to these criticisms, Benesch (1999) demystifies power relations while discussing critical NA in an academic context that fosters democratic participation in life outside the classroom. In this context, the emphasis is on opportunities for change and encouragement of students' engagement and awareness of their rights. The author suggests that the data collection instruments can be developed through the active participation of students. In other words, the items in the instruments can be developed based on students' perceived needs, reflecting a critical pedagogical approach to teaching and curriculum development.

To address the gaps in the literature, this study conducts a critical NA following Benesch's (2001) recommendations, focusing on democratic participation and power relations and accepting students as active members of society. In this context, NA is a component of critical pedagogy because it is being used to identify inequalities and encourage learners to question and democratise their learning process. In this context, the present study aims to diagnose the needs of Turkish medical students in medical English courses at Uludağ University in Turkey. Face-to-face interview data were collected to supplement the questionnaire findings and allow all of the stakeholders an opportunity to express their perceptions of the needs of medical students and provide valuable insights into the literature on critical NA methodology and strategies for balancing power relations. Unlike previous studies, in this study, critical pedagogy and critical thinking in education are addressed.

The critical pedagogical principles emphasised in this study include:

- (i) the purpose of education is encourage students to view their circumstances as a problem to reflect and act upon;
- (ii) practitioners should participate in and contribute to teaching as life-long learners;
- (iii) practitioners act as individuals when approaching problems; and
- (iv) learning atmospheres should be created in which students have the right and the power to express themselves and make decisions.

This study contributes to the literature by employing qualitative and quantitative techniques to collect detailed information about learners' needs from all stakeholders. To the best of my knowledge, this study is the first attempt in the literature to triangulate both methodology and data with critical pedagogy by comparing students' needs at two different time periods and involving all of the stakeholders in the development of the data collection instruments. The findings may therefore have significant implications for course design. This study aims to investigate the following research questions:

1. What are the perceived EAP needs of Turkish medical students learning medical English as a foreign language in the Faculty of Medicine?

2. Are there any differences between the perceptions of medical specialists and Turkish medical students regarding medical English? If so, what are the differences?

2. Methods

2.1. Teaching context

Medical English is an elective course for students in their 1st, 2nd and 3rd years in the Faculty of Medicine at Uludağ University. Before taking the course, students must pass an English proficiency examination developed by the School of Foreign Languages, with a minimum score of 70 out of 100. Accordingly, these students have an English-language background. The course was coordinated by an ESP practitioner who had pursued post-graduate ESP studies and had relevant training in medical field terminology.

2.2. Participants and the study

Cooperation among university entities was necessary because “what is established as a need is a matter for agreement and judgement not discovery” (Lawson, 1979: 37). Given the significance of collaboration in needs identification, three groups of participants were included in this study. The first group consisted of academics (an administrator, content instructors, research assistants and medical English course coordinators, who are also doctors). The second group consisted of medical students who had taken medical English as an elective course. Importantly, students’ motivation may increase when instructors involve them in decision-making processes during the planning of the course curriculum. The third group included doctors from a private hospital and in the Bursa Health Directorship. The first and second groups were considered insiders, whether working or studying, whereas the third group included outsiders.

Different groups of participants were invited to the study because participants can provide valuable data based on their experiences. The first group, academics, has teaching experience and plays various roles in the department, including organising meetings with students and developing curricula. Thus, these participants are familiar with the teaching context and the students’ profiles as insiders and can make valuable contributions to the present study. The second group, students, is the target group.

Students have the right to express their needs for medical English instruction. The third group, doctors in public and private hospitals, represent the students' target needs in their future work context. All of these parties are included in this research to explore the present and target needs of the students. Research participants who are also stakeholders strengthen the outcomes of the research because "getting the right information from the right people" (Horowitz, 1986: 460) is a significant issue when identifying students' needs.

The pilot study included 183 students, who contributed to the development of the questionnaire, and three informants (two students and one content instructor), who were involved in piloting the interview questions. A total of 186 informants participated in piloting the main instruments to identify potential problems. The questionnaire in the main study was distributed to 206 students who did not participate in the pilot study and who had taken the medical English course (see Table 1).

High Schools	Medical English students n (%)	New students n (%)
Anatolian	93 (43.7)	39 (32.2)
Anatolian teacher	17 (8.3)	6 (5.1)
International	25 (12.1)	7 (5.9)
General	8 (3.9)	6 (5.1)
Military	1 (0.5)	0 (0.0)
Private	26 (12.6)	20 (16.9)
Science	31 (15.0)	39 (33.1)
Super	4 (1.9)	0 (0.0)
Other	1 (0.5)	1 (0.8)
Total no. of participants	206 (Female: 98 / Male: 108)	118 (Female: 54 / Male: 64)
Average age	20.14	18.97

Table 1. High schools students graduated.

The students were graduated of Anatolian High School (43.7%), Science High School (15%) and private school (12.6%).¹ In addition to the first group of students who received the questionnaire, the same questionnaire was given to 118 new students (upon registration) who began their education at the end of September 2010 (see Table 1 again). Most of the students had graduated from Science High School (33.1%), Anatolian High School (32.2%) and private schools (16.9%). A total of 525 participants (186 in the pilot study, 324 students in the main study, and 15 other participants) took part in the study.

2.3. Data collection procedure

The researcher collected all of the data between February 2009 and October 2011 after receiving ethical approval from the Bursa Clinic Ethical Committee for both the pilot study in December 2009 and the main study in January 2010. This study is longitudinal in both its data and design. The student data were collected at two distinct time periods; the students were comparable because they were drawn from the same population (Menard, 2002). The analysis included comparing the data collected at both periods (that is, 2009 and 2011). This longitudinal study served two purposes: to describe the changes between old and new students, and to explain the relationships between them (Dörnyei, 2007). The participants were fully informed of the purpose of the study, and confidentiality was assured. Participants gave informed consent. The researcher aimed to fully understand students' context and needs to provide a meaningful set of findings.

The study was conducted in three main phases. The first phase was the pre-pilot study, in which an ethnographic research method was employed to familiarise the researcher with the setting and to determine the research aim and questions. Ethnographic method was used in the present study in line with the research aims because ethnography involves extended observation of a group that requires the researcher to adopt a critical approach. The second main phase of the research included a pilot study that integrated qualitative and quantitative research. Its aim was to test the instruments, including the newly developed questionnaire and interview questions, to identify potential problems and to make the necessary modifications before undertaking the main study. The questionnaire and the interviews were conducted in the third phase.

2.4. Data collection methods

2.4.1. Ethnography

To triangulate the findings, avoid obtaining subjective information, collect accurate empirical qualitative and quantitative data and answer the research questions properly, this study employed ethnographic techniques. Given the benefits of ethnography with a focus on triangulation of methods for an in-depth investigation of the inclusion of social and cultural considerations (Davis, 2005), this study employed classroom observation and interviews that required sustained engagement over time. For the first month, the

researcher was only a nonparticipant-observer, who was detached from the setting and seeking to gain familiarity with the teaching context, the medical students, the language of medicine and the culture of the department. Later, she was a full participant and was involved in all classroom activities as a course coordinator and a participant-observer of the students. This is a common form of observation in ethnographic studies and a key data collection method. The observation was unstructured in the teaching environment where English was being used to facilitate exploration of the teaching atmosphere and the expectations and problems of the students.

2.4.2. Reflective journal

The researcher kept a reflective journal in the form of field notes for three months and regularly reflected and evaluated after each course to guide her actions. The field notes were related to the classroom, the students and the interactions that occurred. The notes about the research setting were rich and provided accurate information for the research report on all stages of the research. Following Cowie (2009), five dimensions were considered (see Table 2).

Dimension	Definition
1. Space	The physical place or places
2. Actors	The people involved
3. Activities	A set of activities people did
4. Goals	The things that people were trying to accomplish
5. Feelings	The emotions felt and expressed

Table 2. Key dimensions of observation following Cowie (2009).

Some excerpts from the reflective journal are presented:

Actors: Students were on time and ready for medical English class. They seem to be willing to learn a lot.

Space: There are almost 200 students but the class is not noisy at all. The sound system is working very well. Although it is a large lecture hall, the seating is planned in a way that we can see each other in the classroom...

Activities: The reading parts were related to the topics Alzheimer's and Schizophrenia. In the first hour, we brainstormed about Alzheimer's to exchange opinions. We read the passage on Alzheimer's. Some of my students said that they have difficulty understanding when I speak in English

and when they are reading passages. I liked the way that students asked their questions sincerely when they did not understand or were hesitant. I tried to encourage them to focus on the general idea, both in reading and in listening. Later, I talked about the strategies they could use when they read. It took almost two hours to examine the paragraph, so we will study other paragraphs in the following weeks. My aim is to scaffold students' understanding while they are coping with the passages that are related to their field. While I am talking about learning strategies concerning reading, I give some clues for the exam. I emphasise that they should focus on the main idea and if there are some unknown words, they can try to guess from the context by concentrating on words that they are already familiar with rather than unknown words.

2.4.3. Questionnaire

Because “whoever determines needs largely determines which needs are determined” (Chambers, 1980: 27), the researcher developed a new questionnaire that, in contrast to previous questionnaires used in needs analyses research, was specific to the teaching target. The questionnaire was designed to act as the basis for the interviews, which were conducted to triangulate the data collected from students and to collect the specialists' perceptions.

The main instrument employed to collect the data was a 5-point Likert scale questionnaire, which was considered the most suitable technique for collecting information from a large number of students. The respondents were asked to rank each item using a 5-point Likert scale (such as ⑤top priority ④priority ③low priority ②not a priority ①absolutely not a priority). A higher item score indicated a more favourable attitude. While developing the study's questionnaire, the learners made critical contributions by identifying their needs, wants and expectations and indicating areas needing improvement. At the beginning of the term, the researcher asked medical students about their needs and expectations regarding medical English instruction. After being asked the open question, “What are your expectations and needs regarding medical English?”, 193 students wrote essays providing recommendations that allowed the researcher to collect relevant data and to conduct the NA as a continuous process. The use of the medical students' own words, phrasing and voices promotes learner autonomy and critical thinking, scaffolds student learning and treats students as active participants (Benesch, 2001), the primary characteristics of critical

NA. The questionnaire development and the instrument's validity and reliability have been thoroughly discussed elsewhere (Onder, 2012a). The questionnaire underwent quantitative analysis and was reviewed by the students. The questionnaire was analysed using the Statistical Package for Social Sciences (SPSS 11). The percentages, means and standard deviations of the questionnaire items were calculated. The interview data were transcribed and grouped, and the findings underwent qualitative analysis. Tables of the categories and codes were generated.

2.4.4. Interview

In conjunction with the use of observation, reflective journal and questionnaires, semi-structured interviews were used in this research to elicit additional in-depth information to complement the questionnaire. Interviews provide the interviewer sufficient flexibility and allow the interviewer to obtain unexpected responses from the interviewees (Richards, 2009). The questions were compatible with the four target subsections of the questionnaire. All of the interviews except two were conducted in Turkish and were then translated into English. Two students and one instructor participated in piloting the interviews. In the main study, thirty interviews were conducted with six groups of participants (see Table 3).

Position	Code	n (%)	Position	Code	n (%)
Dean	P.D.1	1 (3.3)	Medical Student 6	P.S.16	
Course coordinator 1	P.C.2		Medical Student 7	P.S.17	
Course coordinator 2	P.C.3		Medical Student 8	P.S.18	
Course coordinator 3	P.C.4	5 (16.67)	Medical Student 9	P.S.19	
Course coordinator 4	P.C.5		Medical Student 10	P.S.20	
Course coordinator 5	P.C.6		Medical Student 11	P.S.21	
Content instructor 1	P.I.7		Medical Student 12	P.S.22	
Content instructor 2	P.I.8	3 (10.0)	Medical Student 13	P.S.23	
Content instructor 3	P.I.9		Medical Student 14	P.S.24	
Research assistant 1	P.R.10	1 (3.33)	Medical Student 15	P.S.25	
Medical Student 1	P.S.11		Doctor from Bursa Health Directorship 1	P.H.26	1 (3.33)
Medical Student 2	P.S.12		Doctor at Private Hospital 1	P.P.27	
Medical Student 3	P.S.13	15 (50.0)	Doctor at Private Hospital 2	P.P.28	
Medical Student 4	P.S.14		Doctor at Private Hospital 3	P.P.29	4 (13.33)
Medical Student 5	P.S.15		Doctor at Private Hospital 4	P.P.30	

Table 3. Participants in the interview.

3. Results and discussion

3.1. Research Question 1: What are the perceived EAP needs of Turkish medical students learning medical English as a foreign language in the Faculty of Medicine?

The frequencies and percentages of the target items were calculated. Importantly, when the mean scores of each of eight domains were analysed, the results showed that students felt the most strongly about the importance of learning English, indicating that medical students are highly aware of the significance of learning medical English. Students ranked instructor qualifications second, demonstrating their expectations of the instructor. This is an unexpected finding that has yet to be addressed in the literature. However, as shown by the mean scores of the eight domains examined, there are other components that are more important than the students' perceptions of their own shortcomings, problems and aims.

Findings suggest that self-perceived needs may derive from the degree of importance that students assigned to English in their education, and instructors' characteristics and roles in English-language teaching process may have significant effects on students and their perceptions of discipline-specific English. Hyland (1997) conducted research on 1,619 Hong Kong undergraduate students' perceptions from eight disciplines to determine students' perceptions regarding the importance of English. The results showed that Hong Kong students seem to recognise the importance of English competence to their academic success.

In the present study, the qualifications of the instructor, the methods and strategies used, students' attitudes towards English, the settings in which English is used, students' English competency goals and their self-perceived shortcomings and problems represent, in descending order, the remaining important issues. The present study focuses on the findings relevant to four domains of the questionnaire: (i) qualifications of the instructor; (ii) medical students' problems and (iii) shortcomings; and also, (iv) methods and strategies for learning medical English that meet students' needs.

Five items were considered important for an ESP instructor by most of the students (see Table 4): instructors should care about their job, love teaching, and be highly motivated (72.5%); they should teach English in a way that makes students love English (67.2%); they should have a high level of English proficiency (66.9%); they should make the course interesting and

entertaining (65.4%); and they should create a relaxing atmosphere in the classroom (53.4%). Students also expect the instructor to create a detailed teaching plan (41.0%); to prepare before class (42.7%) and to allocate time for student questions (39.9%).

Instructors should	Response					Total
	Completely unimp.	Unimp.	Partially important	Important	Very important	
	n (%)	n (%)	n (%)	n (%)	n (%)	
1. Make the course interesting and entertaining	1 (0.3)	3 (0.9)	24 (7.4)	84 (25.9)	212 (65.4)	324
2. Plan the teaching process in detail	4 (1.2)	12 (3.7)	60 (18.6)	114 (35.4)	132 (41.0)	322
3. Prepare before coming to class	7 (2.2)	10 (3.1)	52 (16.1)	116 (35.9)	138 (42.7)	323
4. Care about their job, love teaching, and be highly motivated	---	3 (0.9)	13 (4.0)	73 (22.5)	235 (72.5)	324
5. Allocate specific time for questions	4 (1.2)	11 (3.4)	44 (13.6)	135 (41.8)	129 (39.9)	323
6. Have professional competency	1 (0.3)	6 (1.9)	26 (8.1)	99 (30.7)	190 (59.0)	322
7. Have a high level of proficiency in English	1 (0.3)	3 (0.9)	19 (5.9)	84 (26.0)	216 (66.9)	323
8. Create a relaxing atmosphere in the classroom	2 (0.6)	6 (1.9)	45 (13.9)	98 (30.2)	173 (53.4)	324
9. Teach English in a way that makes students love English	1 (0.3)	3 (0.9)	19 (5.9)	83 (25.7)	217 (67.2)	323
8. Understand students' feelings and opinions	2 (0.6)	11 (3.4)	55 (17.0)	108 (33.3)	148 (45.7)	324

Table 4. Overall responses for qualifications of the instructor.

Teaching discipline-specific English is more challenging than teaching general English (Selinker, 1979), which may explain students' perceptions of the instructor's characteristics (that is, being highly motivated and proficient). When medical students were asked to describe their shortcomings in the medical-English learning-process, another important, though expected, result showed students experienced difficulty communicating orally (34.2%), as shown in Table 5.

Self-perceived shortcomings	Response					Total
	Absolutely invalid n (%)	Invalid n (%)	Low validity n (%)	Valid n (%)	Top validity n (%)	
1. Difficulty understanding medical articles	6 (1.9)	18 (5.6)	80 (24.8)	128 (39.6)	91 (28.2)	323
2. Not able to pronounce the words	17 (5.3)	34 (10.6)	116 (36.0)	90 (28.0)	65 (20.2)	322
3. Difficulty expressing while speaking	12 (3.8)	29 (9.1)	77 (24.1)	92 (28.8)	109 (34.2)	319
4. Insufficient level of English gained in the classroom	53 (17.0)	35 (11.3)	55 (17.7)	71 (22.8)	97 (31.2)	311
5. Problems in understanding English expressions and statements	11 (3.4)	49 (15.1)	107 (33.0)	92 (28.4)	65 (20.1)	324
6. Difficulty in translating text from English to Turkish	12 (3.7)	33 (10.2)	112 (34.6)	89 (27.5)	78 (24.1)	324

Table 5. Overall responses for self-perceived shortcomings.

This finding contradicts the results of Chia et al. (1999), who found that reading was the most important skill for medical students in Taiwan. The foreign language education system in Turkey may influence the outcome found in this study because grammar rather than language production is emphasised in the teaching of English, and examinations tend to consist of multiple-choice questions. English language productive skills are rarely assessed in Turkish higher education (Onder, 2012b). Another highly relevant self-perceived shortcoming was the insufficient proficiency of English gained in the classroom (31.2%). Crowded medical lecture halls of almost two hundred students or insufficient exposure to English outside the classroom may contribute to this result. Some students felt that they had difficulty understanding medical research articles written in English (28.2%). Unfamiliarity with the research article genre or content may influence this perception. The findings also suggest that pronunciation and the ability to translate text from English to Turkish were not salient perceived shortcomings.

Problems during Medical English process	Response					Total
	Absolutely not a priority	Not a priority	Low priority	Priority	Top priority	
	n (%)	n (%)	n (%)	n (%)	n (%)	
1. Unprepared for the English courses	12 (3.7)	39 (12.1)	86 (26.6)	122 (37.8)	64 (19.8)	323
2. Unable to benefit from the course materials presented	14 (4.4)	63 (19.6)	97 (30.2)	109 (34.0)	38 (11.8)	321
3. Problems understanding English expressions & statements	29 (9.0)	70 (21.7)	104 (32.2)	80 (24.8)	40 (12.4)	323
4. Problems with the relationship between communication functions (showing contrast, explanation, etc)	25 (7.7)	51 (15.8)	86 (26.6)	106 (32.8)	55 (17.0)	323
5. I have +/- opinion toward learning English because of people or events in the past	69 (21.4)	63 (19.5)	58 (18.0)	77 (23.8)	56 (17.3)	323

Table 6. Overall responses for problems.

Almost 20% of the students acknowledged that they were unprepared when they come to class (see Table 6). The researcher's observations and reflective journal confirm students' lack of preparation. An excerpt from the reflective journal reads:

When I asked students if they read the research article on integrated care, I realised that only five students had skimmed the article...

This may be because medical students have busy schedules. Students have weekly mid-term examinations, final and oral examinations in their content courses, including Anatomy. Oral examinations may take priority over preparing for courses. Students also struggled with the relationship between communication functions (that is, expressing contrast) and were sometimes unable to benefit from the course materials.

The strategies that students found to be the most effective were repetition (50.9%) and learning words in context in medical articles (50.9%) (see Table 7). Learning English by using English words in sentences was also

considered important (47.4%). However, the lowest rating in this category was given to learning words through various learning strategies (28.7%). This finding indicates that students may be unfamiliar with learning strategies because unfortunately the education system in Turkey tends to focus on memorisation. The researcher's observations and reflective journal confirm students' discomfort with learning strategies.

Methods and strategies	Response					Total
	Completely unimp. n (%)	Unimp. n (%)	Partially important n (%)	Important n (%)	Very important n (%)	
1. Learning English by using English words in sentence	1 (0.3)	3 (0.9)	29 (9.0)	137 (42.4)	153 (47.4)	323
2. Meanings of English words as well as parts of speech and collocations	3 (0.9)	8 (2.5)	56 (17.3)	123 (38.1)	133 (41.2)	323
3. Reinforcing the target words by repetition	1 (0.3)	4 (1.2)	33 (10.2)	121 (37.3)	163 (50.9)	324
4. Learning words in sentences and in different contexts	1 (0.3)	14 (4.3)	43 (13.3)	144 (44.6)	121 (37.5)	323
5. Learning words through different learning strategies	2 (0.6%)	18 (5.6)	86 (26.8)	123 (38.3)	92 (28.7)	321
6. Learning words by usage in medical articles	1 (0.3)	6 (1.9)	34 (10.5)	118 (36.4)	165 (50.9)	324
7. Learning structures & words through sample texts that include target structures & words	1 (0.3)	12 (3.7)	49 (15.1)	141 (43.5)	121 (37.3)	324
8. Learning by emphasizing the differences between medical and general English	1 (0.3)	11 (3.4)	54 (16.7)	124 (38.4)	133 (41.2)	323

Table 7. Overall responses for methods and strategies.

Excerpt from the reflective journal:

I wrote “heal” on the board and asked if they were familiar with the meaning of this word. They hesitated to answer and claimed that it was the first time they had seen this word. Then, I wrote “health” and they were surprised... Because derivations are very important for understanding words and word structures, I provided lots of examples.

3.2. Research Question 2: Are there any differences between the perceptions of academics and medical students regarding EAP needs? If so, what are the differences?

Interview data were collected from insiders and outsiders to obtain the perspectives of all the potential stakeholders and give them a voice. Through in-depth interviews, this study identified the following salient perceptions of medical English instruction: learning needs, teaching environment, English proficiency, settings in which English is used, individual English-learning goals, problems, learning strategies, teachers' roles and students' opinions and feelings about medical English. The most frequently mentioned categories were identified and are reported here. Salient themes in each category and the total number of interview participants are shown in Tables 8-9. These tables summarise stakeholders' comments. The interview data analysis should be interpreted with caution because the participants did not necessarily share the salient views presented; some views were not included in the table because the attitude was not particularly salient to the given individual at that particular moment (Flowerdew, 1999).

Domains	Participant Code	Participants no (%)	
		Academics (Total: 10)	Students (Total: 15)
1. Learning needs			
Speaking	P.D.1-P.C.3-P.C.4-P.C.5-P.I.7-P.I.8-P.R.10-P.S.12-P.S.18	7 (70)	2 (13.3)
Listening	P.D.1-P.C.3-P.C.4-P.C.5-P.S.14	4 (40)	1 (6.7)
Reading	P.D.1-P.C.4-P.C.5-P.S.17-P.S.18-P.S.19-P.S.21-P.S.25	3 (30)	5 (33.3)
Medical vocabulary	P.C.2-P.C.3-P.C.6-P.I.7-P.I.8-P.S.11-P.S.12-P.S.13-P.S.14-P.S.15-P.S.16-P.S.17-P.S.18-P.S.19-P.S.20-P.S.21-P.S.22-P.S.23-P.S.24-P.S.25	5 (50)	15 (100)
2. Problems			
Speaking	P.C.3-P.C.4-P.C.5-P.I.8-P.I.9-P.R.10-P.S.11-P.S.12-P.S.13-P.S.14-P.S.18-P.S.20-P.S.21-P.S.22-P.S.23-P.S.24-P.S.25	6 (60)	11 (73.3)
3. Learning strategies			
Reading research articles	P.D.1-P.C.6-P.R.10-P.S.18	3 (30)	1 (6.7)
Writing	P.I.8-P.I.9-P.S.12-P.S.17	2 (20)	2 (13.3)
4. Instructors' roles			
Encouraging students	P.D.1-P.C.4-P.I.7-P.S.11-P.S.20-P.S.23	3 (30)	3 (20.0)
Being supportive	P.S.11-P.S.20-P.S.21-P.S.23	0 (0)	4 (26.7)

Table 8. Insiders' comments.

Domain	Participant Code	Participants no. (%)
1. Problems Speaking	P.H.26 -P.P.27- P.P.28-P.P.29-P.P.30	5 (100)

Table 9. Outsiders' comments.

3.2.1. Medical English learning needs

Three skills were considered to be salient learning needs: listening, reading and speaking. The findings revealed that 70% of the academics believed that students need to be able to speak English in a medical context; among the students, however, speaking was considered a less salient need (13.3%). Academics tended to associate speaking with practise, as the following quotes indicate:

P.C.2: What I have observed is the lack of practise [in medical contexts] despite the fact that students have knowledge [of the language]. When they are using the language, they are not active, but is the knowledge useful when they are answering the questions? Yes, it is.

P.C.4: The focus should be on practice. They need to speak and understand what is spoken.

Fifty per cent of the academics and all of the students reported that they needed to learn medical terms. The students strongly criticised grammar instruction:

P.S.16: I do not think that we need grammar while we are learning medical English. We have been repeating grammar since our primary school years. From now on, we should review words because the words we learnt in general English are different than the words in medical English. Learning medical words may make us superior because they represent our field.

P.S.25: The most important deficiency is our knowledge of medical vocabulary. Of course, grammar is also important, but when we can use the correct words, we can understand even if our grammar is bad.

P.S.29: We have studied grammar so far (until we came to university). What did I learn? Whenever I looked at a text, I just said yes, it is present tense, but nothing more. This year, we are learning medical words. It is much better. I can remember.

Academics also stated that medical vocabulary was important for written and spoken communication:

P.C.4: As far as I have observed, one of the basic needs of students is to improve their insufficient vocabulary knowledge.

P.I.8: They should know the precise fixed medical terminology used in the articles.

3.2.2. Problems

As expected, speaking was a crucial problem among academics (70%) and students (40%). The participants made the following statements:

P.C.5: I have difficulty speaking English when I have not spoken it for a long time. Understanding different accents is challenging. Sometimes, even in Turkish we do not understand some accents, and it happens in English, too...As Turkish citizens, we try to talk in English by obeying all the grammatical rules...For example, people from Germany or Sweden speak even though they make grammar mistakes.

P.C.3: I think I have difficulty expressing myself and my emotions, but I am trying to improve. What am I doing? For example, the book I have been reading recently is in English. It is a medical book. Most of the medical books are in English...Two years ago I took a TOEFL examination to test myself. Now I am reading a novel in English that has not been translated into Turkish. In our education system, grammar topics, such as passive voice, are taught very well; however, when we meet a citizen of the world, our students cannot put two words together.

P.I.7: Listening and understanding. I did not learn English in a professional setting, so I have some shortcomings. I have the most difficulty with speaking.

P.S.25: I especially have difficulty in speaking...I am trying to practise with my friends, who are good at English in the lecture hall. However, I cannot say that I am successful in my attempt. I have difficulty in finding words. Everyone says that if you go abroad, you will have to talk more fluently because you must speak, and you do not have any other choice. Erasmus may help.

3.3.3. Methods and strategies

Among the methods and strategies employed, reading and writing were highlighted in the interview data (see Table 9). It is tentatively suggested that the reason for this limited finding is likely to be students' unfamiliarity with English-learning strategies.

The questionnaire findings confirm this supposition. In the questionnaire results, the lowest-rated method was learning words through a variety of learning strategies (28.7%). Instead, personal effort and note-taking were emphasised in the interview data:

PI.7: I have attended many English courses but I think courses are very limited. My individual effort was greater, and I read the Turkish Daily News in English. I recommend this because you read about the events in your country, and you read in English. Therefore, you learn the usage of words in real life. It was very effective and not expensive. Mine was completely an individual effort because you look up each unknown word yourself. I strongly suggest trying this strategy.

PI.8: I underline important words and take notes.

One of the students explained his strategy in an interesting way using a phrase learnt in the medical terminology:

PS.12: I generally study by writing. We learnt the following saying in the medical terminology course: *Docendo discitur*. Writing means studying three times. First, you think what you will write. Second, you see what you write. You see while you are writing. Therefore, I use this strategy, and I believe it works.

The results of the interview data analysis confirm Stevens' hypothesis (1988: 40) that "...the learner usually has at least a rough idea of what he wishes to be able to do in English. Often this rough idea is accurate".

3.2.4. Instructors' roles

There were various perceptions of instructors' roles. The findings suggest that teaching ESP is challenging and that instructors have many responsibilities:

P.C.2: I cannot teach medical English in the relaxing/comfortable way that I teach my own courses. We did not have education or training. Therefore, small problems sometimes occur.

As this participant indicates, teaching ESP is a professional challenge and feeling comfortable in the classroom is difficult. This finding accords with Stevens' (1988) opinion. He notes that professionalism is not easily achieved and that ESP instructors need special assistance and training because ESP teaching requires extra effort and commitment.

Medical professionals had specific expectations of ESP practitioners. Many believed that they should attract students' attention and explain the knowledge of English was to be a world citizen.

P.C.3: There are instructors who attract students' attention, and there are instructors who leave students feeling detached. It is the same everywhere in the world.

P.I.7: I think the most important issue is [telling] the students how English knowledge will help them and that learning English is significant because if a student does not believe in the [benefits of] English, he/she will never put forth effort, especially to learn English. If the instructors explain to the students where English is used, and how beneficial it is for their profession, this will encourage them. I have been to Germany and realised that maybe speaking English is not enough. I understood that if you know German, you may benefit a lot in Germany. Therefore, these experiences should be shared with students.

Students expect teachers to be supportive and encouraging:

P.S.23: [ESP practitioners] should support us when we do not understand a medical word and should not expect us to prepare for the course. We have many courses each term and have difficulty reviewing notes.

4. Conclusions

This study demystifies a valuable methodological approach for identifying the EAP needs of medical students. To achieve the research aims and validate the findings, this longitudinal critical NA employed five types of instruments: ethnographic methods, including classroom observations and reflective journals, a questionnaire and an interview. The findings suggest that administrators and instructors should not be viewed as the only sources of curriculum design because their diagnoses of learners' needs may not be correct. Students should be encouraged to become involved in identifying their own needs. However, generalisability of the findings should be considered with caution because the data are confined to medical students at Uludağ University. Additional data from ESP practitioners could provide additional insights. Because discourse analysis can help practitioners design authentic teaching materials, especially for the teaching of English for academic and professional purposes, it would also be interesting to investigate the medical documents kept by medical professionals.

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NOTES

¹ In Turkey, graduating secondary school students take a national university examination that consists of discipline specific multiple choice questions for university admission. According to the scores they receive on this examination, they can earn a place in the State Science High Schools and State Anatolian High Schools, which are considered more prestigious schools compared to general state schools.

