Deciphering Challenges of Teaching English for Specific Purposes to Medical Students: Needs, Lacks, Students' Preferences, and Efficacy of the Courses

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Abstract

This study set out to examine the main challenges of teaching English for specific purposes (ESP) to medical students regarding their current foreign language needs, lacks, and preferences. Data were collected through questionnaires and interviews with 140 medical students. The findings indicated that in terms of language skills and tasks, the current English for medical purposes (EMP) courses do not meet the needs of medical students and the participants preferred ESP courses that emphasize all the four language skills. Moreover, they were not satisfied with the presented materials and methodology and favored approaches that deploy visual and multimedia modes of presentation. In the case of ESP teachers, it was found that even though the students were mainly satisfied with their ESP teachers, some significant points that are expected to be followed in ESP courses including considering students' needs and difficulties, introducing target discourse communities, practicing relevant genres, providing supplementary materials, and using authentic materials were not taken into account by ESP practitioners. Students also noted other factors, such as limited time, the number of credit hours, the way credits are distributed, and heterogeneous classes, which get in the way of achieving the goals and objectives behind EMP courses. In conclusion, concerning various challenges in ESP classes, more attention should be paid to the course design, technology can be utilized effectively, communicative approaches can be applied, and efficient use of time needs to be considered.

Keywords: ESP, Needs Analysis, Technology, Medical Students, Teaching Challenges

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1.Introduction

Today, English is the dominant global language of technology and science, economic amalgamation, international trade and networks, and globalization (Jiajing, 2007). Therefore, professionals, academics, and students need to use English in almost all fields, and the need for English for specific purposes (ESP) language learning and teaching has increased rapidly (Dudley-Evans & St. John, 1998; Mayo, 2000; Johns, 2013).

In terms of the public domain, although English is not a second language in Iran, recently there has been renewed interest in English language learning. As argued by Sadeghi and Richards (2015), several reasons explain the existing motivation for learning English as a foreign language. These reasons include the learners' intentions to study in the country and/or abroad, travel to foreign countries, communicate with people who do not speak their native language, find an appropriate job, gain prestige, keep up-to-date with techno-gadgets or simply get pleasure out of watching English movies, listening to English songs, and reading English books. Moreover, in many Iranian organizations, knowledge of English and computer are to the employees' advantage. Therefore, English is an asset to many Iranians today.

As far as education is concerned, English is considered as a critical means of progress and is compulsory in public education in Iran. In their tertiary education, students take general English and English for Specific Purposes (ESP) as compulsory courses, which focus on reading comprehension, grammar, and vocabulary with little attention to communication and oral skills. Except for the English language, most university English courses are mainly held in Persian (Alavi, Kaivanpanah, & Taase, 2018; Nezakatgoo & Behzadpoor, 2017).

1.1 English for Medical Purposes

English for Medical Purposes (EMP) can be traced back to the late 20th century, when English turned out to be the leading international language of science and medicine. By then, Latin had been the lingua Franca of medicine in the middle ages (Taavitsainen, 2006), and today the prevalence of Latin still persists in medical terminology, abbreviations, word formation, so on.

English plays an important role in almost all professions, but probably nowhere more than in medical fields, in which effective communication is indispensably important in clinical outcomes. Medical students need English to get ideas and information about medicine by reading specialized textbooks and journal articles, listening to lectures given in English, talking with colleagues and professionals in real situations, viewing multimedia resources, and writing for publication in international journals. Therefore, not surprisingly a great body of EMP research has focused on the English language and communication, including genre and discoursal features studies (Paltridge & Starfield, 2012). Moreover, EMP studies that investigate materials, methodology, or course design can also be of great value to ESP practitioners.

1.2 Rationale, Significance of the Study, and Statement of the Problem

Teaching ESP to students of medical sciences has its own challenges. For one thing, modern ESP courses should meet plenty of demands. ESP practitioners are supposed to consider not only the language required for students' future professional and academic success but also several present-day skills like critical thinking, ability to handle their own learning process, setting goals and coming up with ways to attain them. Many medical students possess an insufficient level of English proficiency and complain about having to do something to meet their English language needs. This problem is further

noticed when they get involved with academia and research, or when they decide to study or work abroad. They usually struggle to find proper courses that can satisfy their English needs.

Besides, ESP researchers, curriculum designers, material developers, and teachers are expected to be aware of underlying principles of ESP learning, teaching, and evaluation, and to consider ESP teaching as a separate branch of English language teaching or ELT (Hutchinson & Waters, 1987). Yet, even though there are plenty of studies on ESP teaching in Iranian contexts, very few have examined whether the principles of teaching ESP are observed in EMP classes to meet the students' needs (Nezakatgoo & Behzadpoor, 2017).

Accordingly, this study was an attempt to investigate the challenges of teaching to medical students—their needs, lacks, and preferences, and efficacy of current EMP courses. Thus, the study sought to answer the following specific questions:

1. What are the medical students' needs in terms of language skills and tasks?
2. What are the medical students' language skills lacks?
3. What are the medical students' preferences with respect to learning styles, methodology, and teacher roles?
4. To what extent are the medical students satisfied with their current ESP teachers?
5. To what extent have the current ESP courses met the needs of medical students?

2. Method

2.1 Participants

A sample of 140 male and female students, aged between 20 and 30, studying in the Isfahan University of Medical Sciences and Islamic Azad University of Khorasgan took part in the study. Because of practical limitations, convenience sampling was used to select the participants. They were in their

fifth and sixth semesters and had passed their General English and first ESP courses prior to their current ESP course. The participants who had scored less than 50 percent at the University Entrance Exam had also passed a 2-credit prerequisite English Course.

2.2 Instruments

2.2.1 Questionnaires

Two questionnaires were used in this study. First, a questionnaire was used to investigate the specific English needs of the students in terms of language skills. The questionnaire used by Mazdayasna and Tahririan (2008) was modified and 24 items were developed to explore the opinions of the students about their needs for the 4 language skills in their field. For each skill, six items were developed and the students were asked to state their opinions about each statement by marking the options on a 5-point Likert scale ranging from 1 (not at all) to 5 (to a great extent). They could mention any extra points related to each section (Appendix A). To augment the accuracy of responses, the questionnaire was given to the students during their ESP classes, having convinced them that the results would not affect their future scores.

A second questionnaire was administered to evaluate the performance of ESP practitioners and to examine the efficacy of the tasks and their methodology. The thirty-one-item questionnaire, which was developed by the researchers, focused on some general points that are recommended for all English courses and especially in ESP courses. For the items which measured general points, several sources including Lewis and Hill's *Practical Techniques for Language Teaching* (1992) were examined thoroughly. For the matters related to ESP courses, several sources, including Basturkmen's *Ideas and Options in English for Specific Purposes* (2006), Basturkmen's *Developing Courses in English for Specific Purposes* (2010), Dudley-Evans'

Developments in English for Specific Purposes (1998), Hyland's *English for Academic Purposes* (2006), and Paltridge and Starfield's *The Handbook of English for Specific Purposes* (2013) were consulted (Appendix A).

The questionnaires were translated into Persian and prior to their administration, they were checked by three experienced ESP teachers to check their relevance and content validity. Following that, they were piloted with a representative sample of the corresponding participants and the Cronbach's alpha test was used for each questionnaire to check their reliability and internal consistency. The alpha tests for the questionnaires were greater than 0.9.

Table 1
Language Skills Questionnaire Reliability

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Items
.961	.960	24

Table 2
Teachers' Evaluation Questionnaire Reliability

Cronbach's alpha	Cronbach's alpha based on standardized items	Items
.959	.962	31

2.2.2 Interview

To have a clear and in-depth picture of the topic, a semi-structured interview was developed to find out the students' views about the questions. The interviewer had prepared a list of questions to ask in a structured method. The same questions were asked of each participant; however, appropriate follow-up questions were also asked based on the answers they gave. The questions checked the efficacy of ESP courses, the students' language needs, their language learning difficulties, their preferred methodology, and the skills they needed to develop. Before their administration, the items were checked according to the feedbacks received from some teachers of specialized

courses and ESP instructors. Thirty-six students were interviewed before or after their classes to get a thorough understanding of what they really desired to see in their courses.

2.2.3 Procedure

The overall time spent on the development of the questions and administration of the study took around one year, beginning in late 2018 and completed in late 2019. The researchers have had long first-hand practical experience in the field of ESP, and EMP in particular.

The questionnaires and interview were administered to the participants in different sessions around the end of their semesters. To ensure the accuracy of the responses, teachers were asked to cooperate and students were given sufficient time to answer. The respondents were told that their responses were confidential and were encouraged to give complete and objective answers. One of the researchers was there to resolve possible ambiguities. For the interview, the same participants were asked to participate in an in-person interview, for which 36 students agreed to participate. The interviews were conducted in several days prior to or following the ESP classes.

3. Results
3.1 English Needs of The Students in Terms of Language Skills

Questionnaire 1 contained 24 items for investigating the views of the medical students about the 4 major skills in their ESP classes (Appendix A). Table 3 displays the summary descriptive statistics for the first questionnaire.

Table 3
Frequency Percentile of Students' Responses to Questionnaire 1

As a medical student, I need English for ……. .	Not at all	A little	To some extent	To a moderate extent	To a great extent
Listening Skills					
1. Conversation on General Topics	2.94	11.76	14.71	36.76	33.82
2. Lectures	1.47	14.71	17.65	32.35	33.82
3. Class Presentations	2.94	16.18	29.41	29.41	22.06

Deciphering Challenges of …

4. English mass media	1.47	10.29	27.94	26.47	33.82
5. Instructions in real situations (hospitals)	0	11.76	14.71	27.94	45.59
6. Listening to Students, Colleagues, And Patients Speaking Skills	2.94	20.59	20.59	17.65	38.24
7. Participating in academic discussions	2.94	11.76	13.24	29.41	42.65
8. Speaking at seminars, meetings and presentations	0	8.82	11.76	20.59	58.82
9. Asking and answering questions in class	1.47	13.24	30.88	25	29.41
10. Communicating in foreign countries	2.94	1.47	5.88	23.53	66.18
11. Talking with professionals in real situations	0	7.35	17.65	30.88	44.12
12. Talking with Lecturers, Students and Patients Reading Skills	1.47	10.29	25	26.47	36.76
13. Reading Medical Textbooks	0	2.94	16.18	22.06	58.82
14. Reading Articles in Professional Journals	0	4.41	13.24	19.12	63.24
15. Reading Medical Reports	1.47	4.41	16.18	26.47	51.47
16. Reading English Newspapers and Magazines	1.47	14.71	23.53	32.35	27.94
17. Reading Texts on The Internet	0	4.41	13.24	30.88	51.47
18. Understanding reading texts at English tests Writing Skills	0	8.82	19.12	23.53	48.53
19. Taking Lecture Notes	4.41	19.12	22.06	27.94	26.47
20. Taking Notes from Textbooks	2.94	16.18	20.59	32.35	27.94
21. Writing A Paper for Oral Presentation	2.94	8.82	25	25	38.24
22. Writing Term Papers	1.47	11.76	35.29	27.94	23.53
23. Writing articles for international journals	1.47	7.35	17.65	27.94	45.59
24. Writing formal letters and e-mails	0	7.35	20.59	25	47.06

Table 4
Four Skills Mean Pattern

Skill	Listening	Speaking	Reading	Writing
Mean	3.78	4.04	4.16	3.81

As can be seen in Table 3, the participants believed all the points mentioned in the items were worth practicing moderately or greatly in ESP classes. The mean score of each skill obtained from Questionnaire 1 is shown in Table 4, which shows that the students believed reading, speaking, writing, and listening respectively were significant to be dealt with in ESP courses. Albeit, according to Table 3, they pointed out all the four skills needed to be emphasized simultaneously.

The 5 items that had the highest scores were items 10 (speaking and communicating in foreign countries), 14 (reading articles in professional journals), 17 (reading texts on the internet), 13 (reading medical textbooks), and 8 (speaking at seminars, meetings, and presentations).

3.2 Learners' Evaluation of Their ESP Instructors

Questionnaire 2 contained 31 items for evaluating the performance of ESP practitioners, and to examine the efficacy of the provided tasks and the used methodology (Appendix B). Table 5 displays the data obtained from this questionnaire:

Table 5
Frequency Percentile of Questionnaire 2 Items

The extent to which I am satisfied with my ESP teacher's ………. .	Not at all	A little	To some extent	To a moderate extent	To a great extent
1.Preparing for the classes	1.4	0	9.3	22.9	65.7
2.Subject matter knowledge	2.9	3.6	24.3	29.3	40
3.Effective responses to the students' questions	1.4	2.1	8.6	27.1	60.7
4.Caring for the students' learning	2.1	1.4	13.6	28.6	54.3
5.Effective use of course materials	1.4	2.1	17.1	33.6	45
6.Attempt to make effective transitions between the content	0.7	5	17.1	28.6	48.6

Deciphering Challenges of …

7.Attempt to link the content with each other	0.7	3.6	18.6	32.9	44.3
8.Interacting with the student	2.9	0	9.3	26.4	61.4
9.Reacting to what the students say	0.7	2.1	7.9	27.1	62.1
10.Attempting to involve the students in the learning process	0.7	0	5	30.7	63.6
11.Assessment and evaluation	2.1	2.1	17.9	27.9	48.6
12.Motivation	2.1	0.7	5	31.4	60.7
13.Attempting to promote students' motivation	2.1	2.1	11.4	35.7	47.9
14.Tasks given to the students	0.7	3.6	16.4	37.1	42.1
15.Attempt to elicit knowledge and information from the students	1.4	2.9	17.1	36.4	41.4
16.Introducing learning strategies	2.9	7.1	19.3	34.3	36.4
17.Interesting and varied teaching	5	7.9	19.3	29.3	38.6
18.Attempt to create a relaxed and enjoyable learning environment	1.4	2.1	12.1	31.4	52.9
19.Attention to the students' language levels	4.3	5	25.7	33.6	30.7
20.Effective use of technology	17.9	12.9	31.4	15	22.1
21.Concern regarding the students' needs and difficulties	4.3	4.3	29.3	30	31.4
22.Correcting the students' mistakes	0.7	3.6	14.3	36.4	43.6
23.Providing sufficient linguistic input	0.7	5.7	20.7	31.4	39.3
24.Sufficient opportunities for interaction	1.4	4.3	13.6	38.6	41.4
25.Exposing students to their target discourse communities	5	5	25.7	30.7	32.9
26.Practice of the genres	3.6	12.1	32.1	26.4	25
27.Providing supplementary materials	3.6	10	22.1	37.1	26.4
28.Using authentic materials and tasks	7.1	7.1	26.4	32.9	25.7
29.Requiring pair/group work	7.1	5.7	20.7	26.4	39.3
30.Assigning individual tasks	0.7	11.4	19.3	29.3	38.6
31.Obliging the students to be prepared for the next session	2.1	2.1	18.6	38.6	37.9

As all the items examined some positive traits of ESP practitioners, the teachers' overall performance based on the items in Questionnaire 2 could be summarized by calculating the mean score for each of the scales used in the

questionnaire. Figure 1 displays the extent to which the participants were satisfied with their ESP teachers.
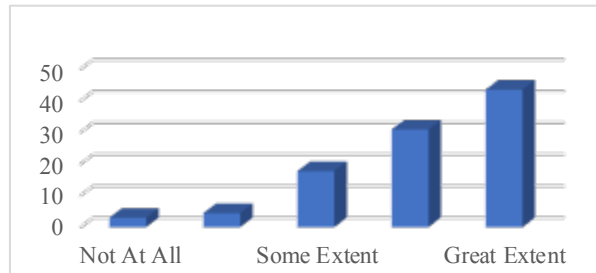

Figure 1. Students' overall evaluation of the teachers

From Table 5 and Figure 1, we see that the majority of the learners were satisfied with their ESP teachers. The greatest level of satisfaction was seen in item 10 that referred to the teachers' attempt in order to involve the students in the learning process; 94.3 % of the students were satisfied with their ESP teachers to a moderate or great extent. The greatest level of dissatisfaction was seen in item 20, which referred to the effective use of technology; only 37.1 % of the respondents were satisfied with their teachers.

As mentioned in the method section, Questionnaire 2 was developed based on some general matters that are recommended to be followed in all English courses and some specifically to be considered in ESP courses. Although all points should be considered, items 21, 25, 26, 27, 28 are specifically recommended by ESP scholars to be emphasized in ESP courses.

According to Table 5, students were satisfied with their ESP teachers except for the insufficient use of technology and involving the students in pair or group work. In terms of points to be considered in ESP courses, the students were not as satisfied as with the general points. The satisfaction

mean scores for ESP-specific items were all lower than those of the general items, except for item 20.

3.3 Interviews

A semi-structured interview was given to twenty-three students to find out their views about our questions. The questions were prepared concerning issues as the efficacy of ESP courses, the students' language needs, language difficulties, preferred methodology, and the skills they had to develop. Thirty-six students were interviewed before or following their classes. The results obtained from this part, which provided a deeper insight into the topic, were classified as the weaknesses and strengths of the ESP learners, instructors, and courses.

3.3.1 Strengths

As far as teachers were concerned, the interviews corroborated previous results obtained from Questionnaire 2. Over half of those surveyed, even those who were not satisfied with their ESP courses, believed that their teachers' performances were satisfactory for several reasons like those mentioned in Questionnaire 2. A good example of the satisfaction could be found in the remarks of one of the participants who was highly dissatisfied with the course. She stated that the only strength that their ESP course had was the teacher!

Another key strength in the ESP courses was working on the related terminology. As mentioned above, in some classes, the teachers paid more attention to the specialized terminology. The respondents believed that it was a splendid idea because when the terminology and ESP materials are presented together, they can reinforce each other and enhance the students' understanding and learning.

As regards language skills, reading was meticulously practiced in the ESP courses. Although focusing solely on reading deprived students from working on other skills, it could help students improve in reading. The students highly appreciated the reading strategies that were introduced and practiced.

3.3.2 Weaknesses

Though mainly satisfied with their ESP teachers (as was found out in Questionnaire 2), the students mentioned several shortcomings in the interviews.

In terms of language skills, they pointed out that the only skill they developed was reading, which left little or no opportunity to practice other skills. Although they all agreed that reading required special attention, they expected to work on all four skills (as was revealed in Questionnaire 1). First, they practiced speaking in some classes, but not adequately. Students preferred working on some hands-on speaking tasks such as operative communication with patients and professionals, giving lectures in academic contexts, and interacting with colleagues in real-life situations. Second, listening was not at all worked in the ESP classes. Neither the course books nor the supplementary materials included listening parts or exercises. The students mentioned that even though there was a real need for listening in medical fields, they had difficulty listening to academic lectures and watching medical videos. Third, like listening skills, writing was not practiced in the ESP courses, either. They mentioned that writing formal requests and articles were among their clear needs. Nevertheless, they admitted that there was not sufficient time to work on this skill. Finally, reading was believed to be overemphasized in their ESP courses.

Regarding terminology, it was found that while the students welcomed specialized terminology, it was not introduced sufficiently. In some classes,

terminology was emphasized more, but it was subjected to criticism for some reasons. First, some respondents believed that some teachers did not have the requisite content knowledge to present the medical terminology. Second, in some classes, it was practiced in long, dull lists without being contextualized. Students claimed that the practice of terminology and the way it was evaluated in their exams were virtually meaningless. Third, they asserted that though the pronunciation of general and academic words was highly emphasized, precise pronunciation of technical vocabulary and terminology was not practiced sufficiently. Finally, some believed that in addition to medical terminology, it would be very practical to acquaint medical students with some ordinary layman's terms–words that people who are not specialists in a field use and understand.

In the case of technology integration, there was almost no application of technology in the ESP classes to enrich the courses. This fact was also revealed in Questionnaire 2 in which the courses did not take advantage of effective use of technology. Not only did the books lack audio or multimedia software, but also the teachers rarely tried to use new technologies as students would expect.

There was discontent at the presented materials, including the course books and supplementary materials. Regarding the course books, classes that used newly published books showed lower levels of dissatisfaction. Participants believed that the old books could not satisfy medical students' current needs and described their course books as having difficult, boring, incomplete, and irrelevant texts with no multimodal annotations. They desired books with high quality, attractive content together with pictures and multimedia software, designed around the four skills. With respect to the use of supplementary materials, few teachers made use of related supplementary materials. Most respondents stated that the use of short relevant academic

articles could make their ESP courses more fruitful and interesting and at the same time improve their motivation. However, the majority of those surveyed admitted that since they had to cover a lot of materials in their ESP courses, there was not enough time to work on supplementary material.

Finally, the participants reported several drawbacks concerning the nature of the ESP courses. For one thing, the majority of the participants believed that there were not enough credit hours for ESP courses to achieve the desired goals. Some declared that the way the credits were distributed over 8 semesters was not satisfactory. Moreover, a number of participants stated that their large and heterogeneous classes led to problems such as ineffective teaching and learning for all students, difficulty in selecting materials, and inadequate classroom engagements.

4. Discussion

4.1 Research Questions 1 and 2

The first two research questions explored the needs and lacks of medical students in terms of language skills and tasks. Participants believed that all the four skills were worth practicing in ESP classes. However, listening and writing are mainly neglected in our ESP courses and speaking is not practiced systematically. The only skill which is focused is reading, most probably due to the fact that reading is highly emphasized and dealt with in our ESP syllabi. Based on the interviews, it was found that most medical students had difficulty with listening and speaking and constantly expressed their concern because of their low competency in these two skills. The students' proficiency in listening and speaking did not improve at all during the entire ESP programs.

On the other hand, we cannot ignore the significant role that reading plays at the heart of EMP courses. Reading texts is particularly important for medical students as English is the language of medical sourcebooks and

journals and it is considered as the 'library language'. As it was mentioned in the results section, our participants believed that reading, speaking, writing, and listening should be practiced in EMP courses. They believed that they needed to improve their reading skills particularly for reading English medical sourcebooks, articles, and online texts. Thus, it seems that they were cognizant of the key role that reading plays in their education and profession.

Speaking was the second important skill in our participants' views. Based on the needs analysis questionnaire, communicating in foreign countries followed by speaking at English seminars, meetings, and presentations and communicating with professionals in real situations were the main needs and lacks the students wished to practice. However, speaking is not under focus in ESP courses, maybe because of the lack of research in this area. As Feak (2013) points out, ESP research is more focused on writing than speaking for several reasons. First, in some ESP contexts, it is considered that written rather than oral genres are more significant in achieving professional success. Second, compiling and analysis of written data are relatively easier. Nevertheless, today due to improvements in technology, collecting speech samples is no longer a costly and time-consuming process. There are plenty of available corpora, such as the Michigan Corpus of Academic Spoken English (MICASE), the British Academic Spoken English corpus (BASE), and the English as a Lingua Franca in Academic Settings corpus (ELFA), which can raise the rate and pace of research on ESP speaking.

The students mentioned that writing was the third skill they needed to improve in their ESP courses, especially writing articles for international journals and writing formal letters and e-mails. Writing is central in ESP due to different reasons. As Hyland (2013) maintains on the challenge of ESP writing, ESP learners need to improve their writing skill since as modern academics, medical professionals need to submit articles to reputable English

journals. In addition, they need to write social and business letters, e-mails, medical reports, and minutes of meetings. Although technology has affected learning in all domains, students still need to practice conventional writing.

Finally, the participants stated that listening was the fourth skill worth practicing in ESP classes, specifically listening to lectures, instructions in real situations such as hospitals, and colleagues and patients. In a review of ESP materials, McDonough (2010) singles out over 20 fields where English is essential for effective communication, such as aviation, commerce, engineering, nursing, medicine, information technology, tourism, maritime communication, telecommunications, media, and law. Good listening comprehension can greatly contribute to academic performance (Jeon, 2007). For instance, Sawaki and Nissan (2009) identified 17 central activities in academic contexts where listening was vital for tertiary-level students and professors. Yet, despite its significance, listening remains to pose a big challenge to many ESP teachers and learners.

4.2 Research Question 3

The third research question examined the medical students' preferences with respect to learning styles, methodology, and teacher roles. The participants stated that they could have had more fruitful classes had the courses been presented in different modes, especially through visual and multimedia presentations. In this regard, as detailed in the results section, students declared their dissatisfaction. To mention some, they said technology was rarely used, materials were presented in boring ancient forms, supplementary materials were not included, and pronunciation of technical words was not practiced sufficiently. In terms of methodology, participants wished they had been competent enough and given opportunities to interact in English around medical subjects. It seems that our students are not as engaged as they can be, and they are mostly passive receivers of large amounts of dull materials.

In this regard technology can be a facilitating tool to meet the students' needs, and at the same time it can present a challenge to ESP classes. Today students are technophiles and cannot put down their smartphones, iPods, or social networks. In addition, improvements in educational technology has changed our views about how learning takes place, contributing to shifts from teacher-centered instruction to learner-centered approaches. Almost all university students use their smartphones to communicate, collaborate, solve problems, and study both at home and classes, even if they are not part of a teacher's lesson plan. Therefore, if it is used properly and if students are given the right instruction, it can be a powerful tool, which allows students to improve learning and solve their problems independently. Likewise, teachers may favor new technologies, but even if they don't, they know that technology can arouse learners' interest. The challenge is how to implement technology to arouse interest. The challenge might refer to the fact that some teachers might see technology implementation beyond their job description. Others, especially the experienced ones, prefer using the approaches they have used for long and do not want to practice changes to their lesson plans. A group of teachers may poorly incorporate technology into their teaching, which leads to other problems. However, if it is used advantageously, it can match different learning styles and lead to interesting methods of presentation.

4.3 Research Question 4

The fourth research question focused on medical students' satisfaction with their ESP teachers. The results of Questionnaire 2 and the interview illustrated a high level of the students' satisfaction with their ESP teachers. Students were asked to evaluate their teachers around some general and specific points observed in their ESP courses. The level of satisfaction for ESP-specific items was not as high as for the general points. The items

included the extent to which medical students' needs and difficulties were considered, target discourse communities were introduced, genres were practiced, relevant supplementary materials were included, and authentic materials and tasks were used. This fact signifies that our ESP practitioners are better EGP than ESP teachers.

Only to a limited extent were the students' needs and difficulties considered in our EMP courses (as discussed in the first research question). Based on the results, target discourse communities were not sufficiently introduced and genres were not practiced. The ESP teachers might not have fully understood the importance of genre practice in ESP courses. However, one key factor that distinguishes ESP from EGP classes is considering target discourse communities and genres. According to Basturkmen (2014), most ESP teachers make use of genre-based approaches in designing ESP courses and materials. In genre-based approaches, ESP teachers draw ESP students' attention to genres or text types that occur in target discourse communities, i.e., the study- or work-related groups the learners plan to enter. In ESP courses, sample-texts should be analyzed in order to gain an understanding of the present conventional formats and collective mindset for communication among members of the target discourse community.

4.4 Research Question 5

The last question asked the extent to which the needs of medical students were met by the ESP courses. Based on the results, while the ESP courses can quite satisfy medical students' needs concerning the reading skill, other skills are not practiced adequately. Moreover, EMP courses which work on medical terminology are particularly welcomed by medical students. However, not all courses work specifically on medical terminology, and even if they do, the method of presentation and practice is not always satisfactory. The application of technology and methods of presentation and practice are

issues which were discussed above. Based on the findings, time, the number of credit hours, the way credits are distributed, and heterogeneous classes are other factors that may get in the way of achieving the goals and objectives of EMP courses.

In terms of terminology, although the traditional belief is that the teaching of technical vocabulary is not the responsibility of ESP practitioners and priority should be given to the teaching of 'semi-technical' or 'core vocabulary', English teachers can demonstrate their ability to present medical terminology through technology. Since technical terms require in-depth knowledge of the subject matter, audio-visual methods of presentation can be a practical alternative. This is in line with Tahririan, Khalili, and Bagheri (2015) who examined the effectiveness of multimedia software in ESP vocabulary instruction. In their study, to present new medical terms, they used 2 multimedia software programs instead of traditional methods and found that it was an effective way to enhance ESP students' learning and engagement. Besides, working on terminology in context, instead of long boring lists of terms out of context, can boost learning.

Finally, time and large heterogeneous classes constitute chief problems in meeting medical students' English needs. Regarding time and credits considered for ESP courses, like most related studies in the literature, this study found that the amount of time available to teachers and learners is limited, and students believe that the number of credits assigned for EMP courses is not enough to reach the goals of ESP courses. Moreover, heterogeneity of classes is another challenge that teachers face in ESP classes and they are seldom well-prepared in their training to meet this challenge. Participants stated that this heterogeneity poses problems like ineffective teaching and learning for the students.

5. Conclusion and Implication

To investigate the challenges in teaching ESP to Iranian medical students concerning their current language needs, lacks, and preferences, this study was conducted with medical students being the main stakeholders. First, the students were surveyed about the language skills they needed to practice in ESP courses. Second, an evaluation of the ESP practitioners was carried out. Finally, a number of students were interviewed to indicate the strengths and weaknesses of the ESP courses. Based on the results, it was found that unlike other majors where practicing all the 4 language skills is not needed, medical students prefer and need to work on the 4 skills in their ESP courses.

5.1 Technology Integration

It was found that the means and methods of language presentation were not satisfactory and students suggested the integration of technology in their ESP courses. As ESP practitioners, we should consider that the world has changed and over the last decade, technology has progressed dramatically in every field. In education, learning is now boundless with information at our fingertips and its application has made learning fun more than any time in the recent memory. Through technology, students can engage in various tasks that help their acquisition of new content. In medical courses, multimedia software, medical videos, and certain applications are invaluable sources that can be integrated into ESP courses in order to have more enjoyable and fruitful classes. There are some common challenges that ESP teachers most likely face in their courses. First, ESP teachers might have difficulty in clarifying technical concepts. Second, sometimes even if teachers have mastery of the content, the students may not put their trust in them. Moreover, students might struggle to understand some subjects, both inside and outside the classroom. Finally, classes may not be enjoyable enough for both students and teachers. Here, some short and to-the-point videos created

by medical professionals can lighten the atmosphere and provide an interactive and interesting approach to learning that is digested easier. There are lists of worthy sources which include medical video libraries for free (Appendix C). Like medical videos, there are medical applications that can be of great help, so the only thing learners need to make use of them is a good level of English. Some top medical apps worth considering are *UpToDate, Epocrates, PEPID, Medscape, MedPage Today, 3D4Medical, Visual DX, BMJ Best Practice,* and *AHRQ ePSS.*

5.2 Target Discourse Communities and Genres Practice

Another important finding was that although ESP teachers carefully considered EGP related points, ESP specific points like target discourse communities and genres were not paid enough attention to in EMP courses. According to Basturkmen (2014), there are several ESP practices to make students familiar with the target discourse communities. Through understanding of genres, a discourse community's ways of thinking and norms are signaled. Three genre-based approaches in ESP, identified by Wharton (1999), are *induction*, *adjunct*, and *apprenticeship* or *mentoring* models. The most applicable one to our ESP courses is the induction model. In this model, the ESP teacher introduces features of communication and genres in the target discourse community and opportunities for practice, which helps learners know more about the forms of communications used in the target discourse community. Turner (1996) suggests genre-based instruction using tasks developed to make students aware of the value systems of the community. In this way, students learn not only the linguistic information (genre conventions) but the belief systems and the ways of thinking of the community.

5.3 Materials

The results also indicated that the medical students were not satisfied with the used textbooks and supplementary materials, especially courses with outdated ESP textbooks. In designing and selecting ESP materials, locally produced authentic medical texts, commercially published textbooks, or some combination of both can be considered. Ideally, the first alternative is preferred since the course content can be precisely tailored to the specific needs of the target learners. However, there are clear drawbacks: designing materials for a specific group can be time-consuming and uneconomic; moreover, it needs creativity, skills, and consultation with medical professionals. In addition, in some medical schools, ESP teachers are obliged to follow a specific textbook, which deprives the courses of having specifically tailored content. Therefore, the latter seems to be the right choice to make. Then, while a commercially published textbook is covered, some relevant authentic supplementary materials can be exploited to teach ESP to medical students or clinicians. For instance, the textbook *100 Cases in Clinical Medicine* (Rees, Pattison, & Kosky, 2013) is a ready source that provides cases parallel to visiting patients and providing opportunities for self-directed exploration of clinical problems. Moreover, there are plenty of medical articles, recorded lectures and podcasts, online videos, interesting infographics, and applications that can be integrated into the ESP courses to enrich them.

5.4 Time and Class Size

Finally, the current study found that limited time and large heterogeneous classes were other obstacles to achieve the desired goals for EMP courses. It is hoped that policymakers reconsider the number of credit hours allocated to EMP courses. The participants also had some suggestions regarding the way credits are distributed. For instance, one of the participants suggested that

instead of having two 3-credit ESP courses in two semesters, they have four 1.5-credit courses in four semesters. In this way, they will have longer exposure to the English language. In addition, ESP practitioners need to be wary and try to make their courses as efficient as possible. As far as the heterogeneity of ESP classes is concerned, students can be given a placement test and placed in classes at the right level. However, as Shimizu (2002) points out, there are several challenges in administering placement tests, such as difficulty in allotting a certain time, burdens coming from the development of tests, the division of responsibility, and processing and management of the data. In addition, placement tests might have negative impacts on learners, such as fostering negative attitudes towards English and learning, and lower chances for students to learn from each other. In short, as Ur (2012, p. 280) points out, teaching large heterogeneous classes is a demanding task and there are no perfect solutions. However, there are some helpful suggestions such as varying activities (so that different learning styles and levels are addressed), making them interesting (so that more advanced students won't be bored by lower-level activities), encouraging collaboration (to take advantage of possibilities of peer-teaching and -learning), personalizing activities, and designing tasks with a clear, easily-achieved success level, in addition to further optional extensions for faster workers.

5.5 Limitations

To finish, the present study was subject to two major limitations. First, the only stakeholders of this study were medical students. Further studies regarding ESP practitioners and medical practitioners in addition to medical students would be worthwhile. Moreover, the sample was recruited from only two universities. Selecting larger samples from more universities can further investigate the present challenges in teaching ESP to medical students.

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Appendix A. Needs Analysis Questionnaire

Dear Participants,

The following questionnaire investigates the needs of medical students taking English as a required course. The aim is to explore the opinions of the medical students on their expressed needs in using the four macro English skills for their studies. Please tick (√) the relevant choice for each question.

1: Not at all **2**: A little **3**: To some extent **4**: To a moderate extent **5**: To a great extent

Listening skills					
As a medical student, I need English for:	1	2	3	4	5
1. Listening to conversation on general topics					
2. Listening to lectures					
3. Listening to presentations in class					
4. Listening to English mass media					
5. Listening to instructions in real situations (hospitals)					
6. Listening to students, colleagues and patients					
Notes (if any):					
Speaking skills					
As a medical student, I need English for:	1	2	3	4	5
7. Participating in academic discussions					
8. Speaking at seminars, meetings and presentations					
9. Asking and answering questions in class					
10. Communicating in foreign countries					
11. Talking with professionals in real situations					
12. Talking with lecturers, students and patients					
Notes (if any):					
Reading skills					
As a medical student, I need English for:	1	2	3	4	5
13. Reading medical textbooks					
14. Reading articles in professional journals					
15. Reading medical reports					
16. Reading English newspapers and magazines					
17. Reading texts on the Internet					
18. Understanding reading texts at English tests					
Notes (if any):					
Writing skills					
As a medical student, I need English for:	1	2	3	4	5
19. Taking lecture notes					
20. Taking notes from textbooks					
21. Writing a paper for oral presentation					

| 22. Writing term papers |
| 23. Writing articles for international journals |
| 24. Writing formal letters and e-mails |
| Notes (if any): |

Appendix B. Teachers' Evaluation Questionnaire

Dear Participants,

The following questionnaire investigates the extent to which medical students are satisfied with their ESP teachers. The aim is to evaluate ESP teachers based on some factors that need to be followed in ESP courses. Please tick (√) the relevant choice for each question.

1: Not at all **2**: A little **3**: To some extent **4**: To a moderate extent **5**: To a great extent

The Students' Evaluations Regarding the ESP Practitioner					
The extent to which I am satisfied with my ESP teacher's …….. .	1	2	3	4	5
1.Preparing for the classes					
2.Subject matter knowledge					
3.Effective responses to the students' questions					
4.Caring for the students' learning					
5.Effective use of course materials					
6.Attempt to make effective transitions between the content					
7.Attempt to link the content with each other					
8.Interacting with the student					
9.Reacting to what the students say					
10.Attempting to involve the students in the learning process					
11.Assessment and evaluation					
12.Motivation					
13.Attempting to promote students' motivation					
14.Tasks given to the students					
15.Attempt to elicit knowledge and information from the students					
16.Introducing learning strategies					
17.Interesting and varied teaching					
18.Attempt to create a relaxed and enjoyable learning environment					
19.Attention to the students' language levels					
20.Effective use of technology					
21.Concern regarding the students' needs and difficulties					
22.Correcting the students' mistakes					
23.Providing sufficient linguistic input					
24.Sufficient opportunities for interaction					
25.Exposing students to their target discourse communities					
26.Practice of the genres					
27.Providing supplementary materials					
28.Using authentic materials and tasks					
29.Requiring pair/group work					
30.Assigning individual tasks					
31.Obliging the students to be prepared for the next session					
Notes (if any):					

Appendix C. Websites for Free Medical Videos
(To save on scrolling and leapfrog to the relevant point on the website page, the anchor link can be used.)

Website name and content	Website page	Anchor link
Coursera Lectures by world-class professors and reinforced through interactive exercises.	coursera.org	https://coursera.org/browse/health
CSurgeries Library of surgical procedures created by surgeons for surgeons.	csurgeries.com	https://csurgeries.com
DNA Tube Videos, animations, and slideshows from scientific studies, lectures, and seminars.	dnatube.com	http://dnatube.com
eMedTV Offers a library of more than 3,000 original health-related videos.	emedtv.com	http://emedtv.com
EyeTube High quality ophthalmic surgical videos and panel discussions.	eyetube.net	https://eyetube.net
Free Medical Videos Archive of popular and engaging medical videos from around the Internet.	freemedicalvideos.com	http://freemedicalvideos.com
FutureLearn: Health and Psychology Offers a diverse selection of courses from leading European universities.	futurelearn.com	https://futurelearn.com/subjects/healthcare-medicine-courses
Geeky Medics Free medical student videos, revision notes, OSCE guides, and MCQs.	geekymedics.com	https://geekymedics.com
HealthTalk.org Videos of patients sharing real-life experiences with various health conditions.	healthtalk.org	https://healthtalk.org
Khan Academy Academic videos and lectures on medicine and the healthcare system.	khanacademy.org	https://khanacademy.org/science/health-and-medicine
Mayo Clinic Videos Surgical procedure videos and interviews with Mayo Clinic doctors, sorted by specialty.	medprofvideos.mayoclinic.org	http://medprofvideos.mayoclinic.org
MedicalVideos.com Library of medical videos covering everything from anesthesia to vascular x-ray imaging.	medicalvideos.com	https://medicalvideos.com
Medscape Video Expert interviews and perspectives as well as procedure videos.	medscape.com	https://medscape.com/video
MedTUBE Education platform offering thousands of videos for healthcare professionals.	medtube.net	https://medtube.net
MERLOT: Health Sciences Catalog of peer-reviewed higher education, online learning materials.	merlot.org	http://merlot.org/merlot/HealthSciences.htm

Deciphering Challenges of …

MIT Open CourseWare Lectures and course materials for students, teachers, and self-learners.	ocw.mit.edu	http://ocw.mit.edu/courses/#health-sciences-and-technology
OnlineMedEd 70+ hours of whiteboard lessons covering 250+ topics across 19 specialties.	onlinemeded.org	https://onlinemeded.org
PBS: Health Videos Free videos from your favorite PBS programs, including NOVA and Frontline.	pbs.org	https://pbs.org/search/?q=health&mediatype=Video
TED Health Fascinating presentations by the world's leading thinkers and doers.	ted.com	https://ted.com/topics/health
The Doctor's Channel Short and to-the-point video clips on the latest medical news, ideas, and information.	thedoctorschannel.com	https://thedoctorschannel.com
VuMedi Physician only site providing thousands of videos from leading institutions.	vumedi.com	https://vumedi.com
WebSurg European site created by surgeons for surgeons, in order to help with surgical training.	websurg.com	https://websurg.com
Cleveland Clinic CE Provides webcasts and video lessons for medical professionals.	clevelandclinicmeded.com	http://clevelandclinicmeded.com/online/webcast
GIBLIB Library of high resolution surgical videos, including VR options.	giblib.com	https://giblib.com
Incision Provides high quality procedure videos, filmed from a surgeon's point of view.	incision.care	https://incision.care
Internet Archive Collection of more than two-hundred thousand free historical videos, many academic.	archive.org	https://archive.org
Osmosis Engaging videos that make learning and retaining medical info easy and fun.	osmosis.org	https://www.osmosis.org
The BMJ Videos created for the well-known BMJ organization	bmj.com	https://youtube.com/bmjmedia