

**Original Article**

## Investigating the English-Specific Needs of the M.A Students of Sports Science in Iran

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### Abstract

This study was conducted to investigate the diverse perspectives of English for Specific Purposes Needs of M.A students of Sports Science in Iran based on their language learning needs. A total of 40 male and female students majoring in Sports Science as well as 4 subject instructors who taught ESP at the Sports Science Departments of the universities, took part in the study. The researchers employed a qualitative-quantitative research method encompassing two data-gathering tools: a questionnaire and an interview. Two sets of needs analysis questionnaires were used in this study: the students' questionnaire and ESP instructors' questionnaire. Prior to using students' questionnaire and ESP instructors' questionnaire for data collection, the questionnaires were piloted and validated. The verbal (tape-recorded) data of the semi-structured interviews were analyzed using descriptive statistics. They were thematically categorized to approve the participants' reactions to the related items in the questionnaires. Based on what was revealed by the results, the M.A students of Sports Science often lacked the knowledge and key skills needed in their target language knowledge after graduation. They frequently discover themselves incapable of utilizing what they have learned practically. Additionally, ESP instructors expressed that they were also disappointed with the students' poor writing ability at M.A level. The findings also demonstrated that reading and writing, followed by speaking and listening, were individually recognized as the most vital skills by the participants. Furthermore, the participants expressed dissatisfaction with the lack of translation, writing, and grammar exercises, interesting topics, and pictures in ESP materials.

**Keywords:** ESP, ESP coursebook, M.A students, Needs analysis, Sports Science

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## 1. Introduction

English for Specific Purposes (ESP) is a broad, diverse term for English language teaching (ELT). Within the field of teaching English for Specific Purposes, the idea of examining learners' needs has been considered as a key factor in course design (Brown, 2016). ESP has been popular since the 1960s and it is developing fast in conjunction with gigantic worldwide improvement (Rahman, 2015).

As its name clearly shows, "English for Specific Purposes (ESP) can be defined in terms of the 'purposes' and the 'specificity' of the purposes for which the teaching of English is felt necessary. This entails the importance of the 'needs' of the learners who learn English to respond to the specific requirements of the target situation in which they will have to use the language which, of course, cannot be 'contrived', but will have to be 'genuine' and 'authentic' to be able to serve its purpose. As such, ESP comprises (a) purpose, (b) specificity, (c) learners' needs, (d) target situation, and (e) authenticity and genuineness" (Pashapour et al., 2018, p. 80).

An extraordinary number of obstacles have been created for both instructors and students in developing materials for ESP courses at universities. This is mainly because of the broadly disregarded significance of the relationship between applied linguistics and ESP in the Iranian scholastic setting. Although the preliminary and necessary stage of creating materials for any course such as ESP concerns conducting a *thorough needs analysis* process according to the learning objectives in *important fields of education*, still striking problems in *association* with teaching ESP are witnessed. This deficiency results from the irregularity between the syllabus for general English taught at universities and ESP coursebook contents in other areas of education.

Few attempts have been made to address such an issue in Iran (Eslami, 2010). The coursebooks were not designed based on any precise needs analysis; the only criterion for materials selection was the textbook writers' attitudes without considering the investigation of the present situation analysis. To remedy the situation, the challenges will essentially include creating genuine specific-purpose teaching programs based on learners' educational needs which would provide the proper setting for effective lesson plans.

This study addresses the professional and academic language needs of M.A students of Sports Science through a comprehensive needs analysis in Iranian universities. As Johns and Price-Machado (2001, p. 44) have stated, “language teaching should be tailored to the specific learning and language needs of identified groups of students”. Hence, it is important to emphasize that ESP instructors need to bear the responsibility of surveying *the* opinions, needs, and *desires* of their students, determining specific *learning objectives*, organizing the courses, and after that, making a distinctive learning environment within the classroom. In the case of Exercise Physiology, this problem is even more sensed. As ESP instructors of Sports Science have expressed their dissatisfaction with the lack of a suitable ESP textbook in a pre-study interview, M.A students face problems in their target language knowledge after graduation. That is, they often find themselves unable to use what they have learned in their English course in a practical way. For instance, they can’t write scientific papers in English and get them published in accredited journals or read English reference books and sources, while one of the prerequisites of the discipline is to read academic articles and texts in English. Additionally, ESP instructors have stated that they are also dissatisfied with the students’ poor writing ability at the M.A. level, confessing that students lack the ability to use the academic register appropriately.

For these reasons and more, there is an overall consensus that the problem of Sports Science students’ language proficiency might be deep-rooted in the lack of appropriate discipline-related materials. As no coursebook in the Sports Science discipline exists to function as the main teaching aid in the ESP classroom, ESP instructors have to utilize other related printed materials which are not designed for teaching purposes. To fulfill the present gap, the present study is conducted through the needs analysis questionnaires and semi-structured interviews. Finally, an appropriate ESP course book ought to be created for the M.A. students of Exercise Physiology based on their language learning needs.

## **2. Literature Review**

### **2.1 ESP: A Needs-First Approach**

As Anthony (2018) notes, English for Specific Purposes is defined as an approach to language teaching that centers on the present and future academic or vocational needs of a specific

group of people with particular attention to the necessary language components to meet these needs. According to Burksaitiene (2008, p. 330) “needs analysis is the key to collect insider’s view of the ESP situation and the views of chosen learners are of the utmost importance”.

In defining ESP, the practitioners have given priority to learners’ specific needs. Mackay and Mountford (1987, p. 2) have referred to ESP as the teaching of English for “clearly utilitarian purposes”. These purposes are, whether academic or scientific, ones that obviously depend on the learners’ needs. As this definition explicitly shows, needs analysis lie at the very heart of ESP. Understanding and analyzing students’ needs is incredibly important in an ESP context. According to Kohnke and Jarvis (2021), needs analysis plays an important part in curriculum development and material design in EAP courses at the university. In fact, needs analysis is beneficial to making a language program more suitable to the learners’ needs.

Johns and Price-Machado (2001, p. 43) also believe that “English for Specific Purposes (ESP) is a movement based on the proposition that all language teaching should be tailored to the specific learning and language use needs of identified groups of students and also sensitive to the socio-cultural contexts in which these students will be using English.” Basturkmen (2006, p.18) also states “the role of ESP is to help language learners to build up the needed abilities in order to use them in a specific field of inquiry, occupation, or workplace”.

ESP does not involve a particular kind of language, teaching material or methodology. In fact, ESP is an approach to language teaching based on specific *learners’ needs*. Therefore, the primacy of needs analysis is emphasized in all ESP stages. It has been mentioned that it is not apparent where the boundaries between ESP courses and general English course should be set; many ESP instructors use an ESP approach in their syllabi because they believe carrying out a proper needs analysis actually lead to practical results or consequences. (Anthony, 1997).

## **2.2 Needs Analysis in ESP Programs**

ESP is a goal-directed and learner-centered movement. “As in all ESP teaching situations, we must start by considering the needs of the learners and what they have to do in the target situation” (Richards, 2001, p. 107). In fact, why needs analysis is an essential part of ESP curriculum design is explained by the contributory role of a thorough examination of the ESP learners’ target needs in developing effective ESP programs (Serafini et al., 2015).

Various approaches, models, and taxonomies have been suggested to effectively incorporate the needs analysis into ESP course development. According to Paltridge and Starfield (2013), the most important approaches to needs analysis are described as target situation analysis (TSA) and present situation analysis (PSA). TSA primarily puts emphasis on the learners' needs. PSA, on the other hand, is more learner-centered and analyzes the learners' present situation through questionnaires and interviews. Moreover, TSA can be described as a term that consists of *necessities*, *lacks*, and *wants* (Hutchinson & Waters, 1987). Necessities are what learners need to know in order to communicate efficiently in the target situation. Lacks are what learners already know, and wants are the personal aims or abilities that learners intend to obtain in language learning courses.

Numerous studies on needs analysis have been conducted in Iran and elsewhere in order to examine the specific needs of language learners in different contexts. In one of the most recent studies, Vahdat, et al. (2022) evaluated different aspects of ESP needs of M.A students of ancient Iranian history in the history department of Iranian universities. The findings of this study confirmed that reading skill was the most frequent skill stressed by the ESP instructors, while the students emphasized that they need all four skills for their future workplace.

### **2.3 ESP Material Design**

Creation and selection of materials is a key area of ESP instruction which is the practical result of effective course development and provides the students with materials that will equip them with the skills *they will need* to succeed in their future life and career.

Materials are of high importance in ESP because they play a great part in familiarizing learners with a particular domain of language in use; as a summary, they are a source of “real language” (Dudley-Evans & St John, 1998, p. 171). It's helpful to remember that developing materials is a matter of trial and error, and materials that work well for one ESP course/discipline may not prove effective for other ESP courses/disciplines. (Lesiak-Bielawska, 2015).

Tomlinson (2012) suggests some principles for developing English learning materials. Firstly, the selection of authentic materials is based on the outcomes of the needs analysis. Secondly, learners are expected to be aware of target needs when learning specific materials

from authentic materials. Thirdly, it is very important to provide learners with many target language opportunities in order to achieve their goals. Fourthly, it is vital to provide feedback to the learners to enhance their abilities. Lastly, providing motivating feedback has a positive impact on the development of materials that meet learners' needs.

When designing teaching materials, teachers should first identify learners' needs and interests. Needs and interests can motivate a learner to study a particular English subject since what learners learn is related to what they will need in their future jobs. In addition to designing materials, Pannen and Purwanto (2001) proposed three methods for developing learning materials such as to *begin from the very start*, information rearrangement, and collection. Besides, Hutchinson and Waters offered four main elements to cover the process of designing ESP materials which consist of language input, content focus, language focus, and task.

#### **2.4 Empirical Studies of ESP in the Iranian Setting**

ESP has become one of the most prominent parts of tertiary education in Iranian universities. ESP courses in Iran are typically designed to provide stakeholders with various educational goals. Moreover, these courses aim to enable students to use English in a particular context. In practice, however, these courses are often criticized for not fully fulfilling the students' objectives because they are dissatisfied with their skills.

Reflecting upon these studies, other researchers, such as Aliakbari and Boghayeri (2014), investigated the language needs of architecture graduates at Ilam University in Iran. The results of both groups of participants indicated that reading was viewed as the most *essential skill*. *Writing, speaking, and listening came after, respectively*. Changpueng and Pattanapichet (2015) conducted *another study in a Thai setting*. *They explored the need for English writing abilities in the workplace of engineers and ESP teachers through the use of questionnaires and semi-structured interviews*. The results highlighted that all the participants had the same opinion about the importance of writing enquiry, emails, and reports within their work environment. Suggestions obtained from this study were applied by course designers to design effective ESP courses for engineering students.

A recent study by Hattani (2019) investigated the language learning needs of students in the Department of Engineering at one of the universities in Morocco. The results showed that

the students had a positive attitude and were *highly motivated* to study *English*, which stressed the significance of English for the students' future vocational careers. The results also revealed that these students encountered difficulties in speaking and writing. Besides, Duka, Sujana, and *Melanie* (2020) investigated the students' language needs in learning English based on the implementation of the ESP approach in the context of Indonesia. The findings revealed that the English language knowledge of the students was not sufficient enough to meet the demands of the ESP approach. In another study in the context of Iran, Azadsarv, Maftoon, and Rashtchi (2021) developed a needs analysis questionnaire and explored the language learning needs of the Deck Engineering cadets. The results showed that deck cadets were eager to develop their ESP language skills in order to *perform better* in *their* current jobs. Finally, Vahdat, et al. (2022) focused on different aspects of the ESP needs of the M.A students of Ancient History in universities of Iran. The findings showed that ESP instructors had an emphasis on reading skill, while the students asserted that they need all four skills for their job success. Yet, in the case of Sports Science, the specific language needs are not defined based on language use and the students end up being disappointed with the language proficiency level that they achieve once they join the workplace. This, in fact, accentuates the importance of conducting an effective needs analysis to update ESP materials development in Iran.. Therefore, the following research questions are addressed in the present study:

1. What are the specific English language needs of M.A students of Sports Science?
2. Do the ESP materials used in Sports Science Departments appeal to the students' needs from the students' and ESP instructors' points of view?

#### **4. Methodology**

##### **4.1 Design and Context of the Study**

This current study employed a quantitative survey basis involving interviews and questionnaires. The questionnaires were distributed to two categories of participants, including students and ESP instructors to access more complete insights into the language needs of M.A students of Sports Science of Shahid Chamran University, University of Isfahan, and Tehran University. Since the present study was carried out during the COVID-19 pandemic, electronic versions of the questionnaire were distributed via Telegram Messenger to collect as much

information as possible. The results of this questionnaire were analyzed through descriptive analysis using SPSS. To enhance the validity and reliability of the findings and offer a more profound understanding of the participants' needs, the interviews were conducted to serve as a triangulation.

#### 4.2 Participants

The participants involved in this study consisted of two groups: the first group includes 40 M.A students (male, female) majoring in the field of Sports Science who have passed the general English course, studying at different universities in Iran such as (Shahid Chamran University, University of Isfahan, and the University of Tehran). The second group consisted of 10 stakeholders and subject instructors who teach ESP in the Sports Science Departments of the above-mentioned universities. The selection of the final sample used in the study was a convenience sampling technique.

**Table 1.**

*Demographic Background of the Participants*

No. of Students	40 M.A students
Gender	Females & Males
Native Language	Persian
Major	Sports Science
Universities	Shahid Chamran University University of Isfahan University of Tehran
Academic Years	2021

#### 4.3 Instruments

In this mixed methods study, two data gathering tools were used: needs analysis questionnaires and semi-structured interviews.

##### 4.3.1 Needs Analysis Questionnaires

Two sets of needs analysis questionnaires which were used in this study include students' questionnaire and the ESP instructors' questionnaire. Two modified versions of Mazdayasna



and Tahririan's (2008) questionnaires were utilized to explore the participants' attitudes and opinions of the offered ESP courses. Since the original version of the questionnaires was too long and some items were irrelevant to the case of this study, they were modified to match the present research context. It should be noted that the questionnaires were translated into Persian and then re-translated to English in order to minimize ambiguity and misinterpretation in the language and questions. The first questionnaire, administered to the students, consists of 35 items and uses a five-point Likert scale ranging from 1(not at all) to 5 (to a very great extent). For ease of statistical analysis, the students' questionnaire was divided into four parts each of which was made of different subsections. Part A of the questionnaire contained items asking about the respondents' demographic questions. Part B inquired about the students' views toward their language demands. Part C investigated the students' preferred learning styles and strategies, and, Part D focused on students' motivation, attitude, and interest in learning English. Prior to using students' questionnaire and ESP instructors' questionnaire to collect data, they were piloted. The purpose of the pilot test was to refine the questionnaire so that the respondents had no problems answering the questions. In order to do this, 20 students with similar characteristics participated in the study, and based on the results obtained from the pilot study, the necessary changes were made to make the questionnaire suitable for the research context. The second questionnaire addressed the ESP instructors and was slightly different from the students' questionnaire. It comprised three parts. The first part explored the biographical information of the instructors. Part B explored the opinions of the instructors about the importance of language skills required in study and work. The third part of the questionnaire emphasized the instructors' opinions on the importance of various issues in teaching English for Academic Purposes. The Cronbach's alpha coefficient and the second-order confirmatory factor analysis were used respectively to evaluate the reliability of the instrument and the construct validity of the questionnaires.

#### **4.3.2 Semi-Structured Interview**

A semi-structured interview was conducted with ESP teachers and M.A students of Sports Science for up to 8 minutes in order to reveal their conception and application of the ESP course. In this regard, two semi-structured interviews whose items were consistent with the

questionnaires' items were administered to the M.A students and subject-specific instructors. The semi-structured interviews were formulated on the basis of Present Situation Analysis (PSA) determines the students' strengths and weaknesses, and the Target Situation Analysis (TSA) which centers on identifying the learners' language requirements in a vocational setting. PSA is more learner-centered and collects information from the learners by the means of questionnaires or interviews, and on the other hand the main role of TSA is to collect data about the learners and not from the learners. The verbal (tape-recorded) data of the semi-structured interviews were analyzed using descriptive statistics. In exact terms, the responses provided by the interviewees were recorded and thematically categorized to validate the participants' responses to the related items in the questionnaires.

### **5. Data Collection Procedure**

The first stage in conducting the study was to carry out a language needs analysis. Two sets of questionnaires were directed to 40 students and 5 stakeholders and subject instructors of the University of Shahid Chamran, the University of Isfahan, and the University of Tehran. As already stated, prior to using students' questionnaire and ESP instructors' questionnaire to collect data, the questionnaires were piloted with 102 students and 4 subject instructors, respectively. At the outset, the researcher talked with the participants about the study for a few minutes and made them conscious of the stages they were supposed to go through. Then, to collect data from the participants, electronic versions of the questionnaires were distributed via Telegram Messenger. Using the results obtained from the questionnaire, the reliability of the various parts of the questionnaire was estimated by Cronbach's alpha measure of reliability. Thirty students, along with 4 subject instructors and ESP teachers, were asked to give their opinions on their students' language requirements, needs, and attitudes towards language classes and instructors. To do so, the students tape-recorded their voices for up to 10 minutes. The tapes were later transcribed by the researcher.

### **6. Data Analysis Procedure**

Before using students' questionnaire and ESP instructors' questionnaire to gather data, the questionnaires were first administered, in a pilot study, to 102 students and 4 subject

instructors, respectively. At the outset, the researchers talked with the participants about the study for a few minutes and made them aware of the processes they were supposed to go through. They were informed that it was not necessary to write their names and their answers would not affect their course grade. Then, to collect as much information as possible, electronic versions of the questionnaires were distributed via Telegram Messenger. The results obtained from the questionnaires were used to estimate the reliability of different parts of the questionnaire through Cronbach's alpha measure of reliability. There were a number of the participants who stated they had found one item of the questionnaire ambiguous. The questionnaire was then modified and forwarded to the students. Interviews were also conducted via WhatsApp. Thirty students, along with four subject instructors and ESP instructors, were asked to express their opinions concerning the students' language demands, needs and attitudes towards language instruction, and course instructors. For doing so, the students tape-recorded their voices for up to 10 minutes. The tapes were later transcribed by the researcher using thematic analysis. The technique for thematic analysis was assigning preliminary codes to the voice-recorded data. Then, the similar themes across the different interviews were coded and patterned into one group with common characteristics.

## **6. Results**

### **6.1 Reliability and Validity of the Questionnaires**

Two 6-point Likert scale questionnaires were used for data collection. After refining the questionnaires based on the pilot study, the final versions of the questionnaires were distributed among participants. The Cronbach's alpha coefficient and the second-order confirmatory factor analysis were used respectively to evaluate the reliability of the instrument and the construct validity of the questionnaires. The reliability coefficient for the students' questionnaire is 0.97, which indicates the optimal reliability of this questionnaire. The reliability coefficient for the instructors' questionnaire based on Cronbach's alpha is 0.95, which indicates the optimal reliability of this questionnaire.

The results of the second-order confirmatory factor analysis also showed the sub-factors that shape the main research variable (questionnaire) were appropriate factors; Also, each of the items related to each dimension or factor was appropriate because the pattern fit indicators in the second-

order confirmatory factor analysis confirmed the pattern fit. Table 3 is about the construct validity of students' questionnaire in which the needs of students of Sports Science are highlighted.

**Table 2.**

*Frequency and percentage distribution for each item of the students' questionnaire*

Items	Not at all		A little		To some extent		To a moderate extent		To a great extent		To a very great extent	
	F	P	F	P	F	P	F	P	F	P	F	P
5. listening to conversations on general topics	2.9		7	6.9	25	24.5	22	21.6	22	21.6	23	22.5
6. listening to academic lectures	3.9		7	6.9	20	19.6	17	16.7	22	21.6	32	31.4
7. listening to presentations in class	4.9		10	9.8	17	16.7	29	28.4	22	21.6	19	18.6
8. listening to lengthy oral texts	2.9		9	8.8	21	20.6	20	19.6	20	19.6	29	28.4
9. listening to English mass media	2.0		13	12.7	9	8.8	24	23.5	21	20.6	33	32.4

To answer the first research question, which sought to examine the professional and academic English language needs of students of M.A students of Sports Science, the items of the questionnaire were analyzed quantitatively. The first part of the questionnaire (items 1-4) contained items asking about participants' demographic information. The next part (items 5-9) consisted of five statements based on listening skills. 24.5% of the students believed that listening skills are important for listening to conversations on general topics to some extent. Besides, 31.4% of the students considered "listening ability for understanding academic lectures" of major importance. According to ESP instructors of Sports Science, since the classes were conducted in English, most students' listening ability was insufficient to meet the challenge of comprehending the teacher's talk. Among the students, 28.4% needed to improve their listening skills to understand academic lectures and oral texts in the classroom. They reported they have to listen to class presentations and

lectures and take reliable and accurate notes. Moreover, 32.4% believed that it was vitally important for them to understand English mass media.

**Table 3.**

*The assessment of English- speaking ability*

Items	Not at all		A little		To some extent		To a moderate extent		To a great extent		To a very great extent	
	<i>P</i>	<i>F</i>	<i>P</i>	<i>F</i>	<i>P</i>	<i>F</i>	<i>P</i>	<i>F</i>	<i>P</i>	<i>F</i>	<i>P</i>	
10. participating in academic discussions	5.9	9	88	15.	14.7	26	25.5	22	21.6	24	23.5	
11. speaking at seminars, meetings, and presentation	8.8	8	7.8	7	6.9	29	28.4	24	23.5	25	24.5	
12. giving oral presentation	4.9	$\frac{1}{2}$	11.8	15	14.7	29	28.4	17	16.7	24	23.5	
13. asking questions in conferences related to the field	4.9	8	7.8	13	12.7	29	28.4	21	20.6	26	25.5	
14. talking with professionals in real situations	4.9	8	7.8	10	9.8	27	26.5	21	20.6	31	30.4	
15. asking and answering questions in class	5.9	$\frac{1}{4}$	13.7	12	11.8	30	29.4	23	22.5	17	16.7	

16. Using correct English language forms (pronunciation, structure and vocabulary) to communicate effectively in the class and other related contexts.	3.9	9	8.8	14	13.7	25	24.5	23	22.5	27	26.5
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Concerning speaking skills (items 10-16), 25.5% of the students considered “participating in academic discussions” important to a moderate extent. In relation to items 11 and 12, an equal percentage of the students (28.4%), expressed they needed to improve their oral skills to be able to speak at seminars and meetings as well as give oral presentations in the classroom. “Asking questions in conferences related to the field” was ranked next with an equal percentage of 28.4%. The students also highly valued “talking with professionals in real situations” (30.4%) and “asking and answering questions in class” (29.4%). Furthermore, 26.5% believed that “using correct English language forms such as pronunciation, structure and vocabulary to communicate effectively in the class and other related contexts” is greatly important. They thought if they had enough knowledge of grammar and vocabulary to ask questions and communicate ideas, all their problems would have been solved.

**Table 4.**

*The assessment of English reading ability*

Items	Not at all		A little		To some extent		To a moderate extent		To a great extent		To a very great extent	
	F	P	F	P	F	P	F	P	F	P	F	P
17. reading English articles	4	3.9	7	6.9	11	10.8	29	28.4	15	14.7	36	35.3
18. reading Exercise Physiology textbooks	4	3.9	3	2.9	13	12.7	27	26.5	19	18.6	36	35.3
19. reading Exercise Physiology reports	4	3.9	5	4.9	12	11.8	27	26.5	24	23.5	30	29.4
20. For reading texts on Internet	4	3.9	6	5.9	10	9.8	29	28.4	22	21.6	31	30.4
21. reading English newspapers and magazines	4	3.9	7	6.9	9	8.8	31	30.4	18	17.6	33	32.4

When asked about reading skills (items 17-21), 35.3% of the students found “reading English articles” and “reading Exercise Physiology textbooks” respectively highly important. “Reading Exercise Physiology reports” also received 29.4 % agreement from the students. They said that they needed to improve their reading skills in order to be able to have a good understanding of professional articles and related reading materials in the classroom. In addition, 30.4 % and 32.4% of the students found “reading texts on the internet” and “reading English newspapers and magazines” respectively significant.

**Table 5.**

*The assessment of English writing ability*

Items	Not at all		A little		To some extent		To a moderate extent		To a great extent		To a very great extent	
	F	P	F	P	F	P	F	P	F	P	F	P
22. taking lecture notes	6	5.9	8	7.8	21	20.6	25	24.5	18	17.6	24	23.5
23. writing e-mail to teachers or field experts	7	6.9	5	4.9	15	14.7	24	23.5	24	23.5	27	26.5
24. writing a paper for oral presentation	6	5.9	7	6.9	19	18.6	22	21.6	26	25.5	22	21.6
25. For writing term papers	9	8.8	2	2.0	23	22.5	21	20.6	33	32.4	14	13.7

As far as writing skills are concerned (items 22-25), 23.5% of the students stated the importance of writing skills for “taking lecture notes”. 26.5% of the students ranked “writing an e-mail to teachers or field experts” as greatly important. Moreover, 25.5% of the participants emphasized the need to write a paper for oral presentation to a great extent. In relation to the importance of writing skills for “writing term papers”, 32.4 % of the participants regarded this “to a great extent” important. They pointed out that the students are required to submit English term papers and projects or their final exams, so they need to improve their writing abilities.

The second section of the students’ questionnaire was designed to survey the opinions of Sports Science students regarding their language needs and attitudes towards language instruction. This part asked about the students’ preference for their instructor using Persian in the ESP class. The participants stated their preference for the language of the classroom “usually” (38%), “sometimes” (34%), “never” (14%) and “always” (12%). Concerning the second item, 41.2 % of students agreed to use Persian while translating an English word, while 24.5 % of the students were not sure and 17.6 % disagreed with this item. Regarding the next item, 59.8% of the students considered teaching translation techniques highly valued. In relation to using Persian and teaching through translation, 36.3 % of the students agreed on



“sometimes”. Besides, a vast majority of the students (63.7%) firmly believed the content of ESP textbooks should be chosen based on the students' needs.

To answer the second research question which sought to identify the students' professional and academic needs from the student's and ESP instructor' points of view, the items of the questionnaire were analyzed quantitatively. In this section of the questionnaire, the participants were asked to express their views about the coursebook. For instance, we surveyed to what extent they agreed to the items about the layout and design of the textbook. First of all, 26.5 % said the “units should be well organized and offer easy progression” to a great extent, while 38.2% of the students stated, “the pictures and graphics of the textbook should urge students to participate in class discussions”. 39.2% of the students alleged “the illustrations, tables, figures, etc. should be relevant and practical” and 42.2 % of the participants believed “a suitable glossary should be used at the end of the textbook”. The next items were designed to ask about the objectives of the textbook. 66.7 % of the students gave priority to the item that "the textbook should fulfill the objectives of teaching English for Sports Science students at M. A level", while this item "the objectives of the materials should correspond to the needs of the learners" with 69.6% agreement, was the recognized as the most important to the students. Furthermore, the item, “the objectives of the textbook should be achieved within a fixed period of time,” with 61.8% agreement, was “to a very great extent” important to the students. According to the results obtained from these three items, it can be concluded that the M.A students of Sports Science felt a strong need to have a textbook that caters to their needs.

The students were also questioned about the topics and content of the textbook. Among the items of this section, 35.3 % of the students were of the opinion that “topics of the book should be varied and interesting”, while 31.4 % of the students reported, “the topics should be familiar to the learners” to a moderate extent. With respect to the suitability of the topics with the grade level of the learners, 28.4 % and 36.3% of the students stated: “the topics should be suitable to the grade level of the learners” and “the textbook should cover the four language skills”, respectively.

Moreover, 36.3% expressed “the textbook should cover the four language skills”. Concerning the language, skills, 29.4 % of the students believed that “writing exercises should

be suitable in terms of length and degree of accuracy” to a great extent, while 27.5 % of the students expressed “there should be activities to help learners to enhance their power of structuring writing” to a very great extent. In addition, 30.4% stated, “there should be activities to help learners to practice writing a broad range of text-types” and “the reading passages should be associated with pre/while/post-reading activities”. The next part of the questionnaire, deals with the structure and vocabulary section of the textbook. 31.4 % of the participants reported: “The grammar rules should be presented in a clear and rational manner and in increasing order of difficulty”. 33.3% believed “the new structures should be integrated into a variety of situations” and “the grammatical points should be presented with short, simple examples and explanations”. 32.4% also assigned to “the vocabulary load should be reasonable for the level of the learners”. 29.4 % of the students believed that “there should be sufficient exercises of the grammatical concepts to help the students use the language efficiently and accurately” to a moderate extent. On a similar line, the “textbook should include assessments and self-evaluation at the end of the unit; final tests” (35.3%) were the most highly valued item in this part.

Regarding the last part of the questionnaire, students were asked about the activities and tasks of the textbook. 31.4 % of the participants believed to a moderate extent “that there should be a variety of activities in the textbook”. They stated they need to read reading materials such as various specialized articles and Sports Science textbooks in their specialized courses. 30.4 % of the participants stated their need for “translation activities in the textbook to make sure that the content being communicated is relevant” to a moderate extent. Also, “translation activities for the practice of certain vocabulary, grammar points, styles and registers to be included in the textbook”, followed by 31.4 % of the students’ agreement. In addition, 32.4% of the students believed “there should be a unit in the textbook to teach students appropriate translation techniques when translating a variety type of texts” and “there should be interactive lessons and activities that require students to employ new vocabulary words to express” as the most valued items of this part. In addition, 29.4 % of the students reported “activities should make it easier for the students to apply grammar rules by creating situations where they are needed.” to a moderate extent. Besides, 30.4 % of the participants preferred “communicative exercises to be included in the textbook that enable learners to

perform communication tasks in real-life settings”. Based on what was revealed in this part, most of the students expected that the textbook should have interactive activities that make the students utilize new vocabulary to convey and to be taught translation techniques for translating a variety type of texts throughout the textbook.

The ESP instructors were also asked about speaking skills. All the ESP instructors ranked the items of the questionnaire from “to some extent” to “a moderate extent”. They recognized that the students needed to enhance their speaking ability to participate in academic discussions to “some” or a very great” extent. In addition, they believed “making oral presentations at seminars, meetings, and presentations”, “giving an oral presentation” “asking questions in conferences related to the field”, “talking with the field experts in real-life situations” and “holding class group discussions” are all to some extent needed for M.A Students of Sports Science.

In relation to reading ability, two ESP instructors believed that the students needed to develop their reading skills by reading English articles and Sports Science textbooks to “a great extent”. They also reported since the students should be able to read extensively in their specialized classes, they need to have proficiency in reading Sports Science reports to “a great extent”. Furthermore, only two ESP instructors pointed out it was essential for the students to have the ability to read texts on the internet and English newspapers and magazines to “some” extent.

A semi-structured interview was conducted with 4 ESP teachers and 20 M.A students of Sports Science for up to 10 minutes in order to reveal their conception of the ESP course. From the students’ point of view, the students needed to learn English for different reasons. For example, some reported that English is the universal language that enables them to connect with each other and enhance their knowledge base. But most of the students believed that it is necessary to learn English because it enables them to read and comprehend English scientific articles and resources better.

Concerning language skills, many students believed that all four language skills should be enhanced, but reading, speaking and writing are to be greatly improved. In fact, the students mentioned they spend a considerable amount of time reading English articles and pamphlets, making presentations, and taking notes in their classes, mainly prompting the need

for the improvement of their reading and writing skills. According to some other students, speaking and listening skills were the most important because they wanted to become international referees and needed to improve their conversational and listening comprehension skills.

When asked about teaching translation techniques, the majority of the students regarded the practice of translation necessary. They reported that they need to read extensively in their academic field, so it is fundamental to develop their translation techniques to understand the texts better. Some of the students disagreed because they thought teaching translation techniques takes time and should be done before M.A level. The students were also questioned about whether the essential textbooks for students of Sports Science at M.A level ought to be published or taught in English. In this regard, most of them believed that this could be helpful because they can get a better understanding of English professional articles in their field of study and have the chance to attend seminars. On the other hand, some of the students reported that they lacked English language proficiency and did not have enough knowledge of grammar and vocabulary. They thought that if they had enough knowledge of grammar and vocabulary, this would have been a good idea.

The students were also questioned about the topics of the textbook. All the ESP instructors indicated the topics of the chapters should be relevant to the specialized subjects of Sports Science. Regarding the effectiveness of supporting materials are in providing the students with additional practice opportunities, all ESP instructors said that it depends on the time of the class and the level of students. They added the use of supporting materials could be useful for students with a high and low level of proficiency in English, but three of them, then, said they are most useful for students with high proficiency in the English language and they should not be chosen for students with low English language proficiency. They emphasized students who have a weak background in English may not be competent enough to work on the content text in both their specialized ESP textbook and supporting materials and first need to gain adequate mastery of their specialized ESP textbook.

In relation to the types of exercise and activities in designing a specialized textbook for students of Sports Science at M.A level, they all expressed the textbook should have to improve the students' English reading and writing skills. Moreover, they mentioned that

reading passages are required to be well expressed, clear and obvious so that the students can understand and interpret what is read. As to writing, they stated including activities in the textbook for improving the students' note-taking and essay writing ability in English. Moreover, two of the ESP instructors also gave priority to covering translation techniques.

The ESP instructors had some suggestions regarding the lesson design and exercises of the textbook. All of them stated there should be a glossary of specialized terms and concepts with their definitions. They added it might be better to categorize them so that the students find and read them easily. Three of the instructors believed a wide range of reading passages associated with multiple exercises are required for students of Sports Science at the M.A level. These three ESP instructors also suggested relevant grammar points can also be introduced in small sections in every chapter. In addition, the ESP instructors stressed the use of colorful pictures in each chapter, emphasizing they can increase the students' comprehension. Besides, they all suggested including a "Test yourself" section for exam reading to assess their knowledge of the lesson content. To summarize, they all reported the designed ESP textbook must fulfil all general requirements put on the textbook. That is, they must meet general educational objectives for a given subject and their content must correspond with the content of the particular study subject.

**Table 6.**

*ESP instructors' interviews transcription coding*

Sub-theme	Frequency	Main theme	Questions
The need to updating scientific knowledge	1	Enhancing knowledge and being updated in their academic field of study	1. Why do you think these students should acquire English?
	2	Comprehending specialized textbooks	
	1	Comprehending the Latin root of specialized words	
	1	The need to have an adequate mastery of English at Ph.D levels	

Research needs	2	Reading and comprehending specialized articles	
	1	English is the basis of all sciences	
Non-practicality of books	3	No book which covers the most needed subjects at Exercise Physiology	2. Do they have any ESP textbooks?
	3	No book which covers the relevant specialized issues	
		Random books but not sufficient and comprehensive	
	1		
	3	Textbooks play a dominant part in complementing teachers' lack of information	3. How sufficient do you think the textbook is as a cornerstone for Students of Sports Science at M.A level?
	3	Textbooks provide a range of activities and readings,	
	2	Textbooks provide a visible outline of what is going to be taught	
Relevance of chapters	2	Relevance to the specialized subjects of Exercise Physiology	4. What do you think about the topics of the textbook?
	4	Relevance of chapters to students' fields	
Useful for particular students and levels	3	most useful for students with a high level of proficiency in English	5. How effective do you think the supplementary materials are in providing the students with additional practice opportunities?
	4	Can be useful for students with a high and low level of proficiency in English	
Useful in	4	Depends on the time of the class	

particular conditions		and the level of students	
Exercises and activities	4	Exercises to improve English reading skills	6. What types of exercise and activities do you think are more important in designing a specialized textbook for students of Sports Science at M.A level?
	5	Exercises to improve English writing skills	
	3	Covering translation techniques	
Suggestions	5	A glossary of specialized terms and concepts with their definitions	7. Do you have any suggestions for improving the textbook or improving the English language teaching for Students of Sports Science at M.A level? What kind of exercises or activities should be added?
	5	Reading passages with multiple exercises	
	5	Vivid and colorful pictures	
	5	Review questions for exam reading	

ESP instructors were also asked about the necessity of learning English for M.A. students of Sports Science. All believed that the English language is the main language for studying any subject all over the world. In this regard, they reported English is important for students who wish to continue their studies in higher education, especially M.A and Ph.D students since they need to read the specialized articles and textbooks and comprehend the Latin root of the words. As to having a specialized textbook for M.A students of Sports Science, they all maintained that there is no Sports Science textbook for M.A students on the market. Only one of the ESP instructors reported that there is a textbook that does not provide the most up-to-date, in-depth coverage of the key points and topics in Sports Science.

Concerning the effectiveness of textbooks for students of Sports Science at M.A level, ESP instructors believed that textbooks play a key role in supplementing teachers' knowledge deficits. Besides, they provide a wide range of activities and readings for the students in order to help them to master the lesson content. They also suggested that textbooks are like road maps which tell the students what they should read and what is expected of them.

In relation to the types of exercise and activities in designing a specialized textbook for students of Sports Science at M.A level, they all expressed the textbook should have to improve the students' English reading and writing skills. Moreover, they mentioned that reading passages are required to be well expressed, clear and obvious so that the students can understand and interpret what is read. As to writing, they stated including activities in the textbook for improving the students' note-taking and essay writing ability in English. Moreover, two of the ESP instructors also gave priority to covering translation techniques.

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## **7. Discussion**

The first question sought to find out the specific English language needs of M.A students of Sports Science. The findings of the questionnaires and interviews indicated that the students faced difficulties in all English language skills. The results revealed the students needed to improve their listening skills for listening to academic lectures, lengthy oral texts and English mass media.

The students also stressed the significant role of speaking English in class. They stated that asking questions in conferences related to the field and talking with professionals in real



situations are their main priorities. This finding was consistent with what was reported by the ESP instructors who believed the students' oral communication skills should be improved in order to be able to correspond with instructors in the field (Atai & Nazari, 2011). In addition, they emphasized that M.A. students' English reading proficiency was low. The participants, particularly ESP instructors, pointed out the students had major difficulties in reading, suggesting that students should be taught how to read English articles, Sports Science textbooks and English newspapers and magazines. This is consistent with the statements made in the literature review on ESP in Iranian settings (Alavi & Tahririan, 1996; Atai, 2000; Tahririan, 1987, 1990). For the students, developing reading skills were also necessary for reading texts on the Internet. They believed this enables them to read (academic) information on the Internet and diversify their field of knowledge.

With respect to writing, the participants agreed that having sufficient proficiency in writing for taking lecture notes and e-mail to teachers or field experts are the most important requirements in their field. They commented in order to write effectively and publish their paper in a well-known and high-impact journal, developing good writing skills is crucial. In this regard, ESP instructors pinpointed that the students needed to focus more on enhancing their writing skills because they sometimes needed to write CVs, resumes and job applications (Rostami & Zafarghandi, 2014; Rose & Sookraj, 2015).

It was also reported that the participants considered teaching translation techniques highly significant. They maintained that since the students have a large amount of reading to do, learning translation techniques can help them catch the main idea quickly.

ESP instructors also expressed their attitudes toward the students' general study skills. They were of the opinion that the students must learn common core vocabulary, semi-technical conversation, technical conversation and new words in sentences, synonyms, and paraphrases. They believed good study skills could increase their confidence and competence and help them improve their ability to retain knowledge. Moreover, ESP instructors indicated that both English teachers and subject-specific instructors should teach ESP courses, asserting that they are both experts in their own field and in L1. This finding is consistent with previous studies following the ESP needs of Iranian students (Mazdayasna & Tahririan, 2008).

The second research question investigated whether ESP materials used in Sports Science Departments appeal to the students' needs from the students' and ESP instructors' points of view. The findings of the study suggested the coursebooks and study materials used in Sports Science Departments are not well-designed, motivating, and updated and are less likely to provide the students with useful academic information. The participants, specifically the students, complained that many coursebooks used in Sports Science Departments are not sufficiently engaging and interesting and do not contain practical and academic content. Besides, they expressed the overall design of the coursebooks from cover to cover and the layout of the text on each page are all so bland. They suggested an effective design is a major factor that makes the coursebook appealing to ESP instructors and students. According to the answers of the participants, all four English skills were considered important for academic studies in Sports Science and important for a future career as well. But these skills were not treated adequately in their ESP coursebooks. In relation to this, they stated in their English classes, they have trouble understanding English because they only tend to practice reading and writing, but do not often practice speaking and listening. Most ESP materials do not contain listening/speaking exercises or listening exam. Therefore, it is important for the students to learn these two skills as well.

Moreover, according to what the students asserted, the use of specialized content and language content was essential in the ESP coursebooks. They indicated this provides a way to present vocabulary in an authentic way and the students' motivation will be enhanced because they find the materials relevant to their specific needs. ESP instructors also recommended teaching translation techniques is of high importance for 64 students since they have to read and comprehend a wide range of reading texts at the M.A level. It was also reported that the participants were of the opinion that the knowledge of reading comprehension was vitally important and must be emphasized in all ESP coursebooks. These findings are similar to the relevant findings of Atai (2011), who found that reading ability and comprehension the meaning of the text were perceived to be essential for the students' academic performance.

## 8. Conclusion

The main focus of this study was to examine the professional and academic language needs of students of M.A students of Exercise Physiology in Iranian universities. According to the analysis of questionnaires and interviews, reading and writing, followed by speaking and listening were respectively recognized as the most important skills by the participants. Translation activities were also a top priority for both groups of participants. The participants also added that ESP coursebooks should contain adequate reading passages with comprehension and vocabulary questions. Besides, a list of definitions and explanations of technical and semi-technical vocabularies, concrete illustrations etc. must be included in the coursebook. Since translation activities for the practice of certain vocabulary and grammar points were a high-priority for both groups of participants, they gave prominence to including translation exercises in the ESP coursebook. In addition, the coursebook should have some review questions in English at the end of each chapter for the students to self-test. They also stated including activities in the ESP coursebooks for improving the students' note-taking and essay writing ability in English. In other words, they suggested utilizing activities such as writing a short paragraph about an important concept in the unit or writing sentences using new words.

In conclusion, M.A students lacked the knowledge and key skills needed in their target language knowledge after graduation. That is, they often found themselves unable to use what they have learned practically. Additionally, ESP instructors complained about the poor writing skills of M.A students and admitted that students are unable to answer English written proficiency tests.

All in all, the findings of this study provide an analytical picture of the present English language education in Iran. The obtained results also enable decision-makers to recognize the need to match ESP teaching programs to the real needs of the students. Regarding the present study's limitations, the gathering of data and information was conducted only through the use of an online survey since the study was time bound.

## References

- Ajideh, P. (2009). Autonomous learning and metacognitive strategies in ESP class. *Journal of English Language Teaching*, 2(1), 162-168.
- Alsamadani, H. A. (2017). Needs analysis in ESP context: Saudi engineering students as a case study. *Advances in Language and Literary Studies*, 8(6), 58-68.
- Azadsarv, M., Maftoon, P., & Rashtchi, M. (2021). Importance of the needs analysis of deckengineering ESP students: Developing a needs analysis questionnaire through factor analysis. *Journal of Teaching in Marine Sciences*, 4(23), 137-151.
- Anthony, L. (2018). *Introducing English for specific purposes*. Taylor & Francis.
- Arslan, A., & Coskun, A. (2014). A needs analysis study for the English curriculum of the teaching staff training program in a Turkish university. *Modern Journal of Language Teaching Methods*, 4(1), 283-300.
- Atai, M. R., & Nazari, O. (2011). Exploring reading comprehension needs of Iranian EAP students of health information management (HIM): A triangulated approach. *System*, 39(1), 30-43.
- Atai, M. R., & Tahririan, M. H. (2003). Assessment of the status of ESP in the current Iranian higher educational system. *Proceedings of the 14th European Symposium on Language for Special Purposes: Communication, culture, and knowledge*, 1(1), 133-156. University of Surrey, Guildford, UK.
- Basturkman, H. (2010). *Developing course in English for specific purposes*. New York: Palgrave Macmillan.
- Brown, J. D. (2016). *Introducing needs analysis and English for specific purposes*. London: Routledge.
- Burksaitiene & Tereseviciene. (2008). *Integrating alternative learning and assessment in a course of English for law students*. Lithuania: Vytautas Magnus University.
- Camiciottoli, B. C. (2010). Meeting the challenges of European student mobility: Preparing Italian Erasmus students for business lectures in English. *English for Specific Purposes* 29, 268–280.
- Cowling, J. D. (2007). Needs analysis: Planning a syllabus for a series of intensive workplace courses at a leading Japanese company. *English for Specific Purposes*, 26(4), 426-442.
- Cunningsworth, A (1995). *Choosing your coursebook*. London: Macmillan: Heinemann.
- Duka, L. Y., Sujana, I. M., & Melanie, B. Z. (2020). Needs Analysis for Teaching English at the International Relation Study Program University of Mataram. *Indonesian Journal of Teacher Education*, 1(1), 11-20.
- Eslami, Z. R. (2010). A needs analysis approach to English for academic purposes (EAP) in Iran. *English Language Teaching*, 3(1)1-1.
- Ibrahim, H. (2020). Needs Analysis as a Prerequisite for Designing an ESP Course for Medical Students. *Open Journal of Modern Linguistics*, 10, 83-103.

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Hattani, H. A. (2019). ESP Needs Analysis at the Moroccan University: Renewable Energy Engineering Students at EST Fes as a Case Study. *Journal of English Language Teaching and ESP Needs Analysis of Agricultural Engineering Students*, 4(1), 101-115.

Hutchinson, T., & Waters, A. (1987). *English for Specific Purposes: a Learning-Centered approach*. Cambridge: Cambridge University Press.

Hyland, K. (2006). *English for academic purposes: An advanced resource book*. London: Routledge.

Johns A. M., Price-Machado D. (2001). English for Specific Purposes (ESP): Tailoring Courses to Students Needs and to the Outside World. *Teaching English as a Second or Foreign Language* (pp. 43-91). Boston

Karimnia, A., & Jafari, F. M. (2017). Critical ESP textbook evaluation: The case of visual arts textbook. *Sustainable Multilingualism*, 11(1), 219-236.

Kohnke, L., & Jarvis, A. (2021). Coping with English for academic purposes provision during COVID-19. *Sustainability*, 13(15), 1–10.

Mazdayasna, G., & Tahririan, M. (2008). Developing a profile of the ESP needs of Iranian students: The case of students of nursing and midwifery. *Journal of English for Academic Purposes*, 7, 277-289.

Pannen P. & Purwanto. (2001). *Penulisan Bahan Ajar*, Jakarta: Depdiknas.

Pashapour, A., Ghaemi, F., & Hashamdar, M. (2018). A structural move analysis of research article introduction sub-genre: A comparative study of native and Iranian writers in applied linguistics. *International Journal of Language Studies*, 12(1), 79-106.

Riazi, A. M. (2003). What textbook evaluation schemes tell us? A study of the textbook evaluation schemes of three decades. In *Methodology and materials design in language teaching* (pp.52-68). Singapore: SEAMEO Regional Center.

Rose, P. V., & Sookraj, R. (2015). Needs analysis: Undergraduates' evaluation of a university-wide English language course. *Caribbean Educational Research Journal*, 3(1), 62-75.

Rostami, F., & Zafarghandi, A. M. (2014). EAP needs analysis in Iran: the case of university students in chemistry department. *Journal of Language Teaching and Research*, 5(4), 924-934.

Stevens, P. (1988). ESP after 20 years: a reappraisal. In Tickoo, M. (Ed.), *ESP: State of the art* (pp. 1-13). Singapore: SEAMEO Regional Language Centre.

Taillefer, G. F. (2007). The professional language needs of economics graduates: Assessment and perspectives in the French context. *English for Specific Purposes*, 26(2), 135-155.

Tomlinson B. (2010). *Research for materials development in language teaching*, New York: Continuum.

Vahdat, S., Shooshtari, Z; Basiri, A; & Naderi, F. (2022). Investigating the English Specific Needs of the M.A Students of Ancient Iran History. *Journal of Research in English Language Pedagogy (RELPE)*, 10(3), 437-466.

Varnosfadrani, A.D. (2009). *Teaching English for specific purposes*. In: Reinelt, R. (Ed.), *Into the Next Decade with (2nd) FL Teaching* (pp. 181-201). Japan: Rudolf Reinelt Research Laboratory EU Matsuyama.