

Evaluation of Specialized English Textbook for the Iranian Students of Chemical Engineering

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Abstract

The present study on English for Specific Purposes (ESP) textbook evaluation was an attempt to investigate the students and teachers' perceptions of the textbook *English for Students of Chemical Engineering*, first published in 2000 and lately reprinted in 2017 by the Iranian Organization for Researching and Composing University Textbooks in the Humanities (named SAMT in Iran). A modified version of [Baleghizadeh and Rahimi's \(2011\)](#) textbook evaluation questionnaire, which was itself based on [Sheldon's \(1988\)](#) model of evaluation and adapted by [Karimi \(2006\)](#), was distributed among 110 students of chemical engineering and 11 ESP teachers who had taught the book under question; however, 98 student questionnaires were returned. The obtained data revealed that the surveyed students had positive attitudes towards compatibility of book objectives with course objectives, subject matter, skills and strategies, exercises and activities, appropriateness of content, while they negatively evaluated the book's practical concerns, linguistic issues, and layout. Teachers, on the other hand, held positive perspectives towards practical concerns, objectives compatibility, subject matter, exercises and activities, and appropriateness of content, while they had negative attitudes towards the book's linguistic issues, skills and strategies, and layout. Care, thus, should be exercised while choosing and teaching this book since, despite its enjoying several good features, it might be found demotivating due to its layout and linguistic issues.

Keywords: English for the Students of Chemical Engineering, ESP, Textbook Evaluation, SAMT

1. Introduction

English language is an international language being widely considered nowadays. It is one of the dominant languages of the global market. Iranian students who are keen on engaging in international interactions will seriously need to learn much of their academic content in English. Indeed, they will be able to benefit from many options for high-quality education like going to college in developed countries, if they gain the ability to learn their technical subjects in English ([Razmjoo & Raissi, 2010](#)).

Moreover, there is little doubt that the sharp trend of globalization is creating a necessity for multilingual individuals. Teaching technical content in English to Iranian students will definitely open up new opportunities for them in the future. Therefore, it would be of paramount importance to evaluate the English-written textbooks used by students because this will shape the framework of the student's learning ([Salehi, Khadivar, Babae & Singh, 2015](#)).

Another point is about the textbook itself. While developing materials for a class can be a challenging job, now with a variety of textbooks available on the market each with different features, it can be much more difficult to choose the best suitable book for a particular ESP situation. Bearing this in mind, the importance of book evaluation becomes clear. In fact, a thorough textbook evaluation can greatly enable teachers and policy makers to have the ability to

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discriminate available books on the market for a certain ESP context (Illes, 2012). Indeed, considering weak and strong points of each book, educators can choose the most appropriate one. Thus, through identifying strengths and weaknesses of textbooks, optimum use can be made of strong points, and weaker points can be adapted or substituted from other books (Illes, 2012). Last but not least, more ESP textbook evaluations need to be carried out in the context of Iran and it will be no exaggeration to say that choosing an ESP textbook without its prior evaluation can be quite of a blind choice (Razmjoo & Raissi, 2010).

The present study thus aimed to evaluate the book entitled *English for the Students of Chemical Engineering*, published by the Organization for Researching and Composing University Textbooks in the Humanities (named SAMT in Iran) in Tehran, Iran. This book has been developed to empower the learners' reading ability in academic contexts.

2. Literature Review

Textbooks are often referred to as being a core source for teaching, learning and classroom interaction. In fact, almost all teachers use published textbooks in their teaching career (Cunningsworth, 1995; Hutchinson & Torres, 1994; Tomlinson, 2003). Textbooks are sometimes considered to offer a clear map for the teacher and learner to follow. They indicate to both the teacher and learner where they are, what they have done and what needs to be done to fulfill a specific course aim (McGrath, 2002). They also help learners review and practice what they have learned (McGrath, 2002).

Textbook evaluation is an attempt to measure the potential value of textbooks (Tomlinson, 2011). It involves making judgments about the effects of textbooks on people (learners, instructors and administrators) who use them. These effects may be measured through such features as the: credibility, validity, flexibility, etc. of the textbook. Rea-Dickins and Germanie (1998) define evaluation "as the means by which we can gain a better understanding of what's effective, what's less effective and what appears to be no use at all" (p. 28). Weir and Roberts (1994) are more specific, as they consider textbook evaluation to involve a systematic analysis of all relevant information necessary to improve the textbook. In this study, textbook evaluation can be defined as the process of collecting information about a textbook and analyzing this data to find out what works well, (its merits), and what needs complementing, balancing or eliminating (its deficiencies) for a particular course of instruction. In what follows, some of the empirical studies on textbook evaluation in general, and ESP textbook evaluation in particular, are described.

In an attempt to evaluate textbooks, Litz's (2002) study is comprehensive because it includes users' views (both instructors and learners) to evaluate *English Firsthand 2* used for undergraduate science students (high beginner level) at the Sung Kyun Kwan University Science & Technology in Suwon, South Korea. Litz collected data from 8 instructors and 500 students who used the textbook in the academic year 2000-2001 through questionnaires. The questionnaires were designed to evaluate the overall pedagogical value and suitability of the textbook for the language program, including 'the practical considerations (price, accessories, methodology, etc.), layout and design, range and balance of activities, skills appropriateness and integration, social and cultural considerations, subject content, and language types represented in the textbook' (Litz, 2002, p. 11). In addition to the questionnaire, he also conducted a student needs analysis by a questionnaire, alongside the textbook evaluation. The author found that the textbook was attractive in physical appearance. It was organized clearly and logically to reflect a topic-based structural-functional syllabus which facilitates communicative competence. It was a multi-skills focus textbook, which integrates the four language skills without neglecting the development of other language elements such as vocabulary and grammar. Activities and tasks in the textbook were found to be communicative, including both "controlled practice with language skills as well as creative, personal, and freer responses on the part of the students" (Litz, 2002, p. 33). The shortcomings were said to be: repetition of activities, lack of encouragement of meaningful practice, and lack of realistic discourse, etc. The study concluded with recommendations for supplementing, modifying

and adapting problematic aspects. In addition, consciousness-raising activities, genuine negotiation of meaning tasks, and cooperative learning strategies were suggested by the author.

[Jahangard's \(2007\)](#) study was carried out to evaluate the four ELT textbooks (*English Book 1*, *English Book 2*, *English Book 3* and *Learning to Read English for Pre-University Students*) used in Iranian High Schools. The author of the study evaluated the four textbooks theoretically, using 13 evaluation criteria he believed to be the most common among 10 materials evaluation checklists proposed by different authors. The 13 evaluation criteria include: Are objectives explicitly laid out in the introduction and implemented in the material? Does it give good vocabulary explanation and practice? Are the approaches taken educationally and socially acceptable to the target community? What type of periodic review and test sections do they have? Are appropriate visual materials available? Do they have interesting topics and tasks? Do they give clear instructions? Is the layout and print clear, attractive and easy to read? Is the content clearly organized and graded? Do they contain plenty of authentic language? Do they include good grammar presentation and practice? Do they allow fluency practice in all four skills? Do they encourage learners to develop their own learning strategies and to become independent in their learning?

He examined the four textbooks against each evaluation criterion and analyzed them under each heading. The study found that the textbooks mainly provided reading activities, and grammar practice involving repetition, substitution and transformation objectives. One of the textbooks (*Learning to Read English for Pre-University Students*) was considered to help learners develop learning strategies by stating clearly the characteristics of good learners. This was thought to 'familiarize the learners with cognitive and behavioral strategies or, at least, raise their consciousness about learning strategies' (Jahangard, 2007, p. 147). However, the author concluded that the series failed to meet most of the above-mentioned criteria (e.g. out-of-date topics, incompatibility between the meanings of words in the 'Reading Comprehension Section' and 'New Word Section', etc.). He also suggested that the series needed a deeper analysis by a group of experienced teachers to make sure the judgments were unbiased. The study used evaluation criteria needed for an overall evaluation and analyzed each criterion carefully with reference to the literature and illustrations taken from the textbooks. However, this was a theoretical and subjective evaluation, involving only the author's opinions without feedback from users, so bias is unavoidable.

[Alemi and Mesbah \(2013\)](#) conducted an overall evaluation of the '*Top Notch*' series, widely used in Iran. Their study evaluated the series through feedback from 50 Iranian EFL teachers who were asked to complete a 4-point Likert scale questionnaire developed by [Cisar \(2000\)](#). The results of the feedback showed that the series encouraged learners to communicate. Although the conversations were short and artificial, they were presented in realized contexts. The structure of the whole series was said to be well-organized with an integrated presentation of the four language skills and many good opportunities to practice pronunciation and grammar. The series also included a preview of the grammar, vocabulary and social language from each unit, and a teacher's resource disk, which contained extensive learning activities to assist learning and teaching. The physical appearance of the series was also said to appeal to both teachers and students, with a colorful design and layout. Although the study evaluated the series positively, it was based only on the feedback from teachers without other supporting evidence. It would have been better and more reliable if the authors had involved students in the evaluation and made a detailed analysis of a few textbook units.

[Sarem, Hamidi, and Mahmoudi \(2013\)](#) analyzed an available specialized textbook for the students of Tourism on the basis of the evaluation checklist constructed by Daoud and Celce-Murcia (1979). The results of the study discussed in detail in their study have important implications both for language teachers and material developers.

[Barzegar and Hemmati \(2014\)](#) evaluated the ESD textbook (English for the Students of Dentistry) using McDonough and Shaw's (2003) internal and external evaluation model and the ACTEFL Evaluation Checklist to examine its appropriacy for the target situation. The researchers

reviewed and presented sixteen evaluation models produced by various applied linguists. The external and internal evaluation of the textbook showed that it cannot be used as the core materials for the ESD course in its present format and state. Also, based on standards of the ACTEFL Evaluation Checklist, the textbook scored 33 out of 100 points indicating that it does not observe the features of an acceptable material for the target situation.

Baleghizadeh and Rahimi (2011) evaluated the textbook *English for the Students of Sociology: Social Science Texts* taught at the University of Tehran. The purpose of their research project was to determine the overall pedagogical value and suitability of the book toward this specific language program. To achieve this goal, a questionnaire consisting of 20 items and examining 6 factors (practical concerns, materials in relation to course objective, subject matter, linguistic issues, skills and strategies, variety of tasks and activities, and the layout of materials) was used. Participants included 30 students of sociology, who were taking an ESP course at the University of Tehran. The findings indicated that the book, despite having merits, was not very suitable for the course. Suggestions regarding the kinds of activities, strategies, layout and other important issues were discussed in their paper.

[Salehi et al.](#) (2015) evaluated an ESP textbook entitled *Medical Terminology: An Illustrated Guide* authored by [Janson Cohen in 1995](#) which is taught at some universities in Iran. Two researcher-made questionnaires and one interview protocol were used to collect Iranian medical instructors and learners' perceptions of the content, exercises, and topics of their ESP textbook. The findings revealed that the content and the topics of the ESP medical textbook were based on the learners and instructors' needs; however, the materials were not interesting and up-to-date.

[Dayane Tous and Haghghi \(2014\)](#) evaluated Payame Noor University ESP textbook on "*English for the students of computer engineering*" through a mixed method approach. The research instrument consisted of a five-point Likert scale researcher-made questionnaire consisting of 22 items, which was designed on the basis of eight checklist references. Sample of the study consisted of 49 junior students majoring in computer engineering, who were selected through convenience sampling method. The textbook was evaluated in terms of six criteria of aims and approaches, design and organization, skills and strategies, topics, practical considerations and illustrations, language content and exercises. The findings indicated that despite having pedagogical values, the textbook was not very good according to design and organization, language content and exercises, skills and strategies, practical considerations and illustrations.

[Ghalandari and Talebinejad \(2012\)](#) presented an analysis of medical ESP textbooks taught in Shiraz Medical College based on Hutchinson and Waters' (1987) framework. The compatibility of the content of these textbooks with the students' needs were discussed. Considering the result of evaluation on ESP textbooks, they found that ESP textbooks in medicine were appropriate books for the purpose of medical English for Iranian physicians and compatible to student's needs and achievement.

Reviewing the literature on the previous studies, a gap in the literature was felt, which could be filled by the current study through seeking to answer the following questions: (a) To what extent do the materials included in the textbook *English for the Students of Chemical Engineering* address the practical concerns of the course? (b) To what extent does the textbook *English for the Students of Chemical Engineering* meet the course objectives? (c) To what extent does the textbook *English for the Students of Chemical Engineering* address the required language issues? (d) To what extent does the textbook *English for the Students of Chemical Engineering* address the subject matter of the course? (e) To what extent does the textbook *English for the Students of Chemical Engineering* foster language learning skills and strategies? (f) To what extent are exercises and activities in the textbook *English for the Students of Chemical Engineering* appropriate? (g) To what extent is the layout of the textbook *English for the Students of Chemical Engineering* appropriate? and (h) To what extent is the content of the textbook *English for the Students of Chemical Engineering* appropriate for its intended audience?

3. Methodology

3.1. Design of the Study

As the general objective of the present study was to evaluate a chemical engineering textbook taught at Iranian universities, the selected research design was survey in nature owing to the fact that a questionnaire was administered to elicit the aspects of the book from both chemical engineering students and teachers' perspectives.

3.2. Participants

To achieve the goals of this study, 98 BSc students of chemistry at Islamic Azad University, Abadan Branch and Ahwaz Branch, who were studying the targeted ESP book in the fall semester of 2018 were accessed and asked to fill out the ESP Book Evaluation Questionnaire. The participants were both male ($n = 36$) and female ($n = 62$), ranging in age from 20 to 38, with an average age of 23. They had all passed their general English course and were taking the ESP course (English for the Students of Chemistry) when they were surveyed. In addition to those students, 11 university lecturers who had previously taught this book were accessed and asked to complete the same questionnaire. Those lecturers were all PhD holders in TEFL and faculty member at Islamic Azad University, Abadan Branch and Ahwaz Branch.

3.3. Materials

The book evaluated in this study was *English for the Students of Chemical Engineering*. The book was published first in 2000 by the Organization for Researching and Composing University Textbooks in the Humanities (named SAMT in Iran) in Tehran and reprinted 13 times in the following years (the last reprinting being in 2017, and each print copy of the book is sold for 15,000 Toman). This 334-page book, as it is claimed by its authors ([Ghiassee, Mirjalali, & Roshani, 2017](#)) aims to develop the learners' reading ability in academic contexts. To this end, it includes a variety of up-to-date authentic texts from a wide range of text types and genres, focuses on fostering reading skills and/ strategies helpful in disciplinary contexts, has a broad range of meaningful and engaging tasks and activities, organizes units around themes to make them reader-friendly, involves in-depth vocabulary activities, provides great opportunities for improving grammar in context, uses translation as both a reading practice and a translation activity.

3.4. Instrumentation

From among a large number of checklists and ESL/ESP evaluation schemes developed over the past decades by scholars in the field of TEFL and materials development (See a comprehensive list of them in the preceding section), the researcher adapted Baleghizadeh and Rahimi's (2011) 20-item questionnaire, which was based on Sheldon' (1988) model of evaluation, modified by Karimi (2006). Baleghizadeh and Rahimi's questionnaire consisted of eight sections: practical concerns, materials in relation to course objective, linguistic issues, subject matter, skills and strategies, variety of tasks and activities, the layout of materials, and the content of the book. In order to make the items easy to understand for the students participating in their study, they had translated the questionnaire into Persian, and their piloted translated version enjoyed the Cronbach alpha reliability index of 0.76. For validation purpose (as guided by two experts in the field of TEFL), this questionnaire, as was mentioned above, was adapted to the context of the present study by replacing the items which were not appropriate for the purpose of this study (e.g., item # 15 which examined the extent to which the book addressed the speaking skill of the students, while the ESP book in this study was truly claimed to be an academic reading comprehension text, not targeting the students' speaking, listening, or writing skills). The adapted translated questionnaire had the same eight sections, in addition to an open-ended question at the end of the questionnaire which asked about the students' needs in the given ESP course and if their ESP book could satisfy their learning needs or not. The Cronbach alpha reliability of this adapted questionnaire turned out to be .81.

3.5. Data Collection Procedure

This study was conducted on the book *English for the Students of Chemical Engineering*, which has been widely used to teach ESP to the students of chemical engineering at Iranian universities. The study was particularly carried out to collect data from BSc students of chemical engineering and their ESP teachers at Islamic Azad University, Abadan Branch and Ahvaz Branch. Prior to the implementation of the study, an ESP textbook evaluation questionnaire was adapted from Baleghizadeh and Rahimi (2011), and its translated Persian version was modified and piloted before being given to the intended students and teachers. Once the researcher was certain about the validity and reliability of the questionnaire, she distributed 110 copies of the questionnaire among the chemical engineering students at IAU, Abadan Branch and Ahvaz Branch and 11 ESP teachers who had had the experience of teaching the given book at least once over the past years. Since the questionnaire had no more than 20 items, it was easy to administer, and collect in one single shot. At the end of the fall semester of 2018, when the students, and their teachers alike, were almost done with the course and when they had experienced the book enough to be asked about it, the researcher distributed the questionnaires at the end of a class hour and asked the students and teachers to complete the questionnaires carefully. The participants were briefed that their answers would be kept confidential, and to assure this, they were advised to fill out the questionnaires anonymously. They were also assured that their answers to the questionnaire had nothing to do with their scores on the course and that their teachers would not access the questionnaire results. After the questionnaires were collected, 12 student questionnaires were excluded from the analysis due to missing data and speculations about the patterns on the questionnaire which were due to shoddily answering the questions.

In order to analyze the data and answer the research questions, each of the eight parts of the questionnaire were examined separately, once for students and once for teachers. Frequencies of the responses to each questionnaire item were tabulated and a mean score was calculated for each item on the questionnaire. Since the choices on the questionnaire ranged in values from 1 to 5, the mean scores of a questionnaire item could show whether the participants agreed or disagreed with that particular statement. Then an overall mean was calculated for each section of the questionnaire, and using one-sample *t* test, the researcher could determine whether the participants had significantly positive or negative attitudes towards practical concerns, materials in relation to course objective, linguistic issues, subject matter, skills and strategies, variety of tasks and activities, the layout of materials, and the content of the book.

4. Results

In what follows, the results obtained from students and teachers are presented separately.

4.1. Students' Perceptions of the Textbook

Table 1 presents the frequencies of students' responses for each item choice:

Table 1: Frequencies of Students' Responses to the Questionnaire Items

Statements		5 Very Much	4	3 Average	2	1 Not at all	Mean
Practical Concerns	1 To what extent is the book available?	21	35	17	14	14	3.41
	2 Does the book have any accompanying materials (e.g. CDs or websites)?	0	0	44	31	31	2.21
	3 Is the text book cost-effective?	16	21	25	30	30	3.11
Course Objectives	4 To what extent do the objectives of the textbook match the objectives of the course?	23	26	27	12	12	3.40
	5 To what extent does the	20	18	27	21	21	3.13

		textbook seem to be in tune with broader educational concerns?						
	6	To what extent is the text book appropriate for the audience?	12	17	24	29	29	2.79
Linguistic Issues	7	To what extent does the textbook contain basic grammatical patterns and vocabulary?	11	13	29	26	26	2.70
	8	To what extent does the presence of structures and vocabularies move gradually from simple to more complex?	15	16	25	24	24	2.85
	9	To what extent are new vocabularies and structures recycled in subsequent units for reinforcement?	14	18	26	20	20	2.85
	10	To what extent does the subject matter motivate and interest you?	22	23	18	19	19	3.16
Subject Matter	11	To what extent has the ordering of the material by topics been arranged in a logical fashion?	26	21	18	16	16	3.23
	12	To what extent has the content been graded according to the need and background knowledge of the students?	15	39	17	16	16	3.31
	13	To what extent does the textbook teach the reading skill?	27	26	20	14	14	3.44
Skills & Strategies	14	To what extent does the textbook teach reading strategies?	15	30	18	17	17	3.07
	15	To what extent does the textbook make students capable of reading other similar specialized texts?	11	23	31	21	21	3.00
	16	Are the exercises and activities varied enough to challenge the students?	31	23	12	17	17	3.38
Layout	17	To what extent does the textbook appear attractive?	7	26	19	26	26	2.73
	18	To what extent do photographs and illustrations in the book motivate you to talk about the subject?	9	16	37	25	25	2.86
Content	19	To what extent are the materials related to your major?	33	26	16	13	13	3.60
	20	To what extent has the content been graded according to the proficiency level of the students?	18	21	13	29	29	2.93

In Table 1, the mean scores for each questionnaire item are lined up along the rightmost column. Each mean score should be compared with the average value of the choices (i.e., 3.00) to see if the students have positive perceptions of their ESP textbook (in case a given mean score exceeds 3.00) or they hold negative attitudes towards the book (if a given mean score falls below 3.00). The highest mean scores in Table 4.1 belonged to items # 19 ($M = 3.60$), 13 ($M = 3.44$), 1 ($M = 3.41$), and 4 ($M = 3.40$). Through these four items, the students agreed respectively that (a) the materials in the ESP textbook under examination related to their major, the textbook taught them the reading skill, the objectives of the textbook match the objectives of the course, and the books is available and easily accessible on the market.

On the other hand, the students tended to disagree more with items # 2 ($M = 2.21$), 7 ($M = 2.70$), 17 ($M = 2.73$), and 6 ($M = 2.79$), which respectively referred to (a) having accompanying materials, (b) containing basic grammatical patterns and vocabulary, (c) attractiveness of the book, and (d) appropriateness of the book for its intended audience. A more analytical look at the ESP textbook from the eight different aspects of the questionnaire could be found in Table 2:

Table 2: One-Sample t-test Results for the Students' Responses to the Questionnaire Items

	t	df	Test Value = 3			
			Mean	Sig. (2-tailed)	95% Confidence Interval of the Difference	
					Lower	Upper
Practical Concerns	-.25	2	2.91	.82	-1.64	1.46
Course Objectives	.60	2	3.10	.60	-.65	.86
Linguistic Issues	-4.00	2	2.80	.051	-.41	.01
Subject Matter	5.38	2	3.23	.03	.04	.41
Skills Strategies	1.24	2	3.17	.33	-.41	.75
Activities	.	.	3.38	.	.	.
Layout	-3.15	1	2.79	.19	-1.03	.62
Content	.79	1	3.26	.57	-3.99	4.52
Total	.78	19	3.05	.44	-.09	.21

Table 2 revealed that from among the eight dimensions investigated in the questionnaire, practical concerns ($M = 2.91$) linguistic issues ($M = 2.80$), and layout ($M = 2.79$) were found to be negatively evaluated by the students. However, the degree with which these criteria were negatively perceived was not statistically significant since the p values under the *Sig.* column in front of practical concerns, linguistic issues, and layout were found to be greater than the significance level ($p > .05$).

On the other hand, course objectives ($M = 3.10$), subject matter ($M = 3.23$), skills and strategies ($M = 3.17$), activities ($M = 3.38$), and content ($M = 3.26$) were positively evaluated by the students. Moreover, the total mean score of the questionnaire was larger than 3.00, which means on the whole, the students had positive attitudes towards the book. However, the p values for the total questionnaire, and for course objectives, skills and strategies, and content did not indicate statistical significance; the only aspect which received significantly positive perception of the students was the subject matter aspect of the questionnaire ($p < .05$).

4.2. Teachers' Perceptions of the Textbook

Table 3 shows the frequencies of the teachers' responses for each choice in all the items of the questionnaire.

Table 3: Frequencies of Teachers' Responses to the Questionnaire Items

No	Statements	5 Very much	4	3 Average	2	1 Not at all	Mean	
Practical Concerns	1	To what extent is the book available?	4	6	1	0	0	4.27
	2	Does the book have any accompanying materials (e.g. CDs or websites)?	0	0	2	7	2	2.00
	3	Is the text book cost-effective?	4	3	2	1	1	3.72
Course Objectives	4	To what extent do the objectives of the textbook match the objectives of the course?	3	5	2	1	0	3.90
	5	To what extent does the textbook seem to be in tune with broader educational concerns?	2	4	3	2	0	3.54
	6	To what extent is the text book appropriate for the audience?	1	3	4	2	1	3.09
Linguistic Issues	7	To what extent does the textbook contain basic grammatical patterns and vocabulary?	2	2	1	4	2	2.81
	8	To what extent does the presence of structures and vocabularies move gradually from simple to more complex?	1	1	4	3	2	2.63
	9	To what extent are new vocabularies and structures recycled in subsequent units for reinforcement?	1	2	3	4	1	2.81
Subject Matter	10	To what extent does the subject matter motivate and interest you?	2	3	3	2	1	2.72
	11	To what extent has the ordering of the material by topics been arranged in a logical fashion?	3	4	2	2	0	3.72
	12	To what extent has the content been graded according to the need and background knowledge of the students?	2	4	2	1	2	3.27
Skills & Strategies	13	To what extent does the textbook teach the reading skill?	1	2	3	2	3	2.63
	14	To what extent does the textbook teach reading strategies?	0	0	2	6	3	1.90
	15	To what extent does the textbook make students capable of reading other similar specialized texts?	2	1	3	3	2	2.81
Activities	16	Are the exercises and activities varied enough to challenge the students?	3	3	4	1	0	3.72
Layout	17	To what extent does the textbook appear attractive?	0	0	2	4	5	1.72
	18	To what extent do photographs and illustrations in the book motivate you to talk about the subject?	0	0	3	5	3	2.00
Content	19	To what extent are the materials related to your students' major?	3	4	4	0	0	3.90
	20	To what extent has the content been graded according to the proficiency level of the students?	0	1	3	4	3	2.18

Table 3 shows the mean scores of each of the questionnaire items. The highest mean scores in this table are those belonging to items # 1 ($M = 4.27$), 4 ($M = 3.90$), 19 ($M = 3.90$), 3 ($M = 3.72$), and 16 ($M = 3.72$). In these five items, the teachers expressed their positive attitude regarding (a) the availability and accessibility of the book, (b) compatibility of the book objectives with the objectives of the course, (c) relevance of the materials to the students' major, (d) cost-effectiveness of the book, and (e) existence of ample exercises in the book, respectively.

In contrary, the surveyed teachers failed to have positive attitudes for a number of items such as items # 17 ($M = 1.72$), 14 ($M = 1.90$), 2 ($M = 2.00$), 18 ($M = 2.00$), and 20 ($M = 2.18$), which were respectively germane to (a) the attractiveness of the book, (b) the extent to which the book teaches reading strategies, (c) accompanying materials, (d) motivating photographs and illustrations, and (e) appropriateness of the book for the proficiency level of the students. Table 4 displays the eight aspects of the questionnaire from the viewpoints of teachers, and whether they were positively or negatively perceived by the ESP teachers:

Table 4: One-Sample t-test Results for the Teachers' Responses to the Questionnaire Items

	Test Value = 3					
	t	df	Mean	Sig. (2-tailed)	95% Confidence Interval of the Difference	
					Lower	Upper
Practical Concerns	.48	2	3.33	.67	-2.61	3.27
Course Objectives	2.17	2	3.51	.16	-.49	1.51
Linguistic Issues	-4.16	2	2.75	.053	-.50	.00
Subject Matter	.81	2	3.23	.49	-1.00	1.48
Skills Strategies	.89	2	2.44	.18	-9.28	14.18
Activities	.	.	3.72	.	.	.
Layout	-8.14	1	1.86	.07	-2.91	.63
Content	.04	1	3.04	.97	-10.88	10.96
Total	.98	19	3.41	.34	-.47	1.30

Based on the information presented in Table 4, among the eight dimensions investigated in the questionnaire, linguistic issues ($M = 2.75$), skills and strategies ($M = 2.44$), and layout ($M = 1.86$) were negatively perceived by the ESP teachers, but the degree with which these aspects of the book were negatively perceived was not of statistical significance as the relevant p values were larger than the pre-specified level of significance ($p > .05$).

In contrary, all the other five aspects of the book (i.e., practical concerns, course objectives, subject matter, activities, and content) were positively perceived by the teachers, yet their positive perceptions failed to reach statistical significance. Additionally, the total mean score of the questionnaire was larger than 3.00, which indicates that, on the whole, the ESP teachers had positive attitudes towards the book although their positive attitudes were not of statistical significance.

5. Discussion

In this section, the results of the research questions of the study are presented and discussed in light of the literature on the topic. The first research question of the study related to the practical concerns regarding the book. It dealt with questions about the availability of the book, its price, and any accompanying supplementary materials. Since the book under investigation was published by SAMT, which is a leading publisher and book distributor in Iran, students, and their teachers alike, did not face any problems accessing the book and the book price was fine with them given the large number of pages it contained. However, what made teachers and students' evaluations decline for this aspect of the book was that it lacked any supplementary materials such as CDs or website, which is of course a characteristic of the books published by SAMT, but given the developing era of technology, it would be wise to incorporate such supplementary materials in the design of the books they publish. This problem of lacking supplementary materials is also observed by other Iranian

scholars who have investigated the ESP books in Iran: Baleghizadeh and Rahimi (2011) who used a roughly similar questionnaire to the one employed in this study, investigated the ESP textbook *English for the Students of Sociology* and found that "[r]egarding the first area [in the questionnaire], it was revealed that the main problem was with the supplementary materials" (p. 1013). Similarly, [Sajjadi and Hadavi Nia \(2011\)](#), who examined a physics ESP textbook by SAMT publications asserted that "although this book can be used as a main course material, teachers' method and supplementary materials they recommend should compensate for the shortcomings of the book" (p. 191).

The second research question of the study concerned the extent to which the textbook *English for the Students of Chemical Engineering* met the course objectives. Although the instructional objectives of the lessons in the book were not explicitly stated anywhere in the book (which is probably due to the publisher's policies), both students and teachers had positive (though insignificant) attitudes towards the compatibility of objectives of the book with the course objectives. The questions in this part of the questionnaire asked about the possible congruence between the objectives of the book and the instructional objectives specified in the curriculum for the course, and about the appropriateness of the materials in the book for the target audience. The respondents believed the materials were appropriate for chemistry students, and this runs counter to the results obtained by Barzegar and Hemmati (2014), who examined the ESP book *English for the Students of Dentistry*, and found (based on the ACTFEL checklist) that the book did not have features appropriate for the target situation. However, the *Medical ESP Textbook* that Ghalandari and Talebinejad (2012) surveyed was reported to be compatible with the students' needs and achievement.

For the third research question of the study (which asked about the extent to which the textbook *English for the Students of Chemical Engineering* addressed the required language issues), the results indicated that neither the students nor the teachers had positive perceptions of the linguistic issues of the book. They, more specifically, did not believe that the book had basic vocabulary and grammar, that the linguistic issues and materials move from easy to difficult, and that the materials taught in the lessons are recycled in the following lessons. This is so because the book does have exercises and activities on both vocabulary and grammar, but nowhere in the book are grammar points or vocabulary items taught to the students; they are just tested without being taught. The same problem could also be seen by the ESP books investigated by Baleghizadeh and Rahimi (2011) and Dayane Tous and Haghighi (2014), who examined the ESP book *English for the Students of Computer Engineering*, and found problems with the language content of the book. What was surprising in the book investigated in the present study was that there was a section in the exercises of the book called Language Focus, where one expects to find grammar points being tested (or perhaps vocabulary exercises which tend to boost the lexical knowledge of the students), but in fact the questions in these exercises tended to tap on the vocabulary that was merely related to the content of the lessons, rather than vocabulary that is designed to cultivate the lexical knowledge of the students.

The fourth research question of the study was "To what extent does the textbook *English for the Students of Chemical Engineering* address the subject matter of the course?" Results revealed that the students held significantly positive attitudes towards the subject matter of the book, while the teachers' perceptions were positive though not statistically significant. This is in line with the results of Ghalandari and Talebinejad's (2012) study, in which the compatibility of the content of the medical ESP book with the needs of the students was tested and it was found that the book was appropriate for this purpose.

Then, the fifth research question of the study addressed the issue of whether the textbook *English for the Students of Chemical Engineering* could foster language learning skills and strategies? It was found in the results of the study that while students gave their positive attitudes to the skills and strategies dimension of the book, the teachers evaluated it negatively from this aspect. This is so because probably students and teachers had different perceptions of what reading comprehension and reading strategies should consist of. The odds are that students think the mere

existence of a reading passage followed by some activities and exercises would make up a reading comprehension lesson, but teachers know that a reading lesson should comprise pre-reading, while-reading, and post-reading activities, and that reading strategies such as predicting the content, skimming, scanning, guessing the meaning from the context, making inferences, etc. should be aimed at in a reading lesson. Notwithstanding, the ESP book surveyed in the current study had no pre-reading activities whatsoever; nor did it incorporate any reading strategies instruction and practice. [Panahi \(2016\)](#) also found in his study that there were significant differences between students and teachers' views on different aspects (e.g., practical concerns, subject matter, activities, and content) of the textbook *English for Students of Preschool and Primary Education* that he examined in his study. The results of the studies carried out by Dayane Tous and Haghighi (2014) and Baleghzadeh and Rahimi (2011) bear striking resemblance to the results of the current study in that the books they investigated could be blamed for impoverished design and coverage of skills and strategies.

Additionally, the sixth research question of the study addressed the extent to which the exercises and activities in the textbook *English for the Students of Chemical Engineering* were appropriate. It was found that both the students and their teachers alike were of the opinion that the exercises, tasks, and activities in the book were varied enough to challenge the students. This is so because the book has a variety of questions including, multiple-choice questions, fill-in-the-blank questions, cloze tests, translation exercises, essay-type questions (which could be answered orally or in writing), etc. However, many of the books mentioned above (e.g., that of Dayane Tous & Haghighi, 2016) received negative evaluations regarding the activities aspect of the books.

The penultimate research question of the study asked "To what extent is the layout of the textbook *English for the Students of Chemical Engineering* appropriate?" and the result of the analysis of the data indicated that the layout aspect of the book was negatively perceived by both students and teachers. The two questions related to this aspect of the book enquired about the attractiveness of the book and about the illustrations and photographs in the book. Since the book has no photographs before, in, or after the reading passages, it is no surprise the respondents did not speak highly of the attractiveness of the book. There are very few figures in a limited number of the reading passages, which create no attractiveness and arise no interest in the students/teachers. This layout problem was also noticed in the books examined by other researchers (e.g., Baleghzadeh & Rahimi, 2011; Dayane Tous & Haghighi, 2014). Moreover, [Salehi et al. \(2015\)](#) examined an ESP medical textbook and found that the materials in the book were not interesting and up-to-date. Likewise, the texts used in the book under investigation in the present study were excerpts from introductory chemistry books which date back to 1982, 1985, and 1986.

Finally, the eighth research question was about the appropriateness of the book for its intended audience, and it was found, based on the responses provided by both students and teachers) that the book enjoys appropriate contents for the intended audience. The two questions for this aspect of the book asked whether the content of the lessons were related to the students' major, and whether the contents were suitable for the proficiency level of the students. These two questions were given positive responses by both students and teachers. This finding is in contrast with the findings of some other studies cited above (e.g., Dayane Tous & Haghighi). In fact, many of the ESP books published by SAMT include obsolete texts which are way above the students' head and are hard to grasp for them; differently put, they do not match the proficiency level of the students. Although this is a prevailing problem in the ESP books published by this publisher, the book examined in the current study had a language which was not too hard to understand by the students.

6. Conclusion and Implications

In this study, the ESP textbook *English for the Students of Chemical Engineering* was put to test via the questionnaire data obtained from 98 university students and 11 ESP teachers. The book is an ESP textbook currently in use at BSc level of some universities in Iran. The book consists of 16 units. All the units of the book follow a unified format: section one: reading comprehension, section two: further readings, and section three: translation activities. The exercises following section one

comprise three reading comprehension exercises, one of which must be answered orally followed by a vocabulary, grammar and two reading comprehension exercises. For section two, there are three reading comprehension exercises, one of which focuses more on the writing skill. Section three requires students to translate an English passage into Persian, and then a vocabulary exercise is added. The results obtained from the study suggest that among the eight dimensions investigated by the questionnaire used in this study, practical concerns, linguistic issues, and layout were found to be negatively evaluated by the students, while course objectives, subject matter, skills and strategies, activities, and content were positively evaluated by the students. As for the ESP teachers, linguistic issues, skills and strategies, and layout were negatively perceived by the ESP teachers, but all the other five aspects of the book (i.e., practical concerns, course objectives, subject matter, activities, and content) were positively perceived by them. Additionally, the total mean scores of the students and teachers' questionnaires indicated that, on the whole, the ESP students and teachers had positive attitudes towards the book although their positive attitudes were not of statistical significance.

The results of the current study bear implications for language teachers, textbook developers, and ESP students. First, language teachers who teach ESP courses using textbook like the one examined in the current study should notice that many of the texts found in such books are obsolete and had better be skipped or replaced with more recent materials. They should always think of preparing supplementary materials for their classes as the contents of the ESP books often lack motivating illustrations and photographs. The exercises in the books should also be chosen and done selectively and with care; as it was mentioned above, there are 16 units in the book, each unit has three reading passages, and the passages are followed by a variety of exercises; it is very difficult (if not impossible) to try to cover all of the materials in a class that meets only once a week for one hour and a half during a 16-session term in which, more often than not, only 12 to 14 sessions are held.

Textbook developers and policy makers are recommended to think of incorporating more interactive and appealing activities for the texts which are up-to-date and interesting to both students and teachers. The lifeless format of the ESP books published by SAMT does more harm than good in that it demotivates many of the students. Due to the facts mentioned in the preceding paragraph, in a term, on average, no more than 50 pages of a book could be covered, while many of the books have more than a dozen of units containing several passages and activities, many of which remain unread.

University students who take ESP course also have to be aware of the fact that not all their English-related hunger could be satisfied by one single ESP textbook. The students may have differing tastes, interests, likes and dislikes. In addition to reading the mandatory texts and doing the related exercises in the books, they are advised to look for and find ESP materials which can satisfy their English-language needs and make and keep them interested in English.

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