The Relationship between Language Learning Strategies, Field of Study, Gender, and Language Proficiency

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Abstract

The present study aimed at exploring the potential relationship between language learning strategies (LLS) and factors such as major fields of study, sex, and language proficiency among university students across different fields such as medicine, sciences, engineering, humanities, and English. To this end, 200 master students were collected and tested. The findings showed that there was statistically significant difference between English-major students' strategy use and that of non English-major students. It was also found that there was no significant relationship between language learning strategies and variables of sex, and language proficiency. Another line of the findings indicated that students enjoyed a high level of metacognitive knowledge of what they were doing. Finally, to examine how students viewed their language needs across different fields of study, the fourth-year students of medicine, engineering, science, and humanities were asked to express their own ideas about the present status of ESP courses. After analyzing the students' responses to the questionnaire, it was understood that ESP courses had not been beneficial because they were far away from the students' needs and expectations.

*Keywords***: Language Learning Strategies, Language Proficiency, Field of Study, Gender**

1. Introduction

It can be argued that Widdowson(1983) along with many others advocate a process- or learner-oriented approach to material development and language teaching for ESL/EFL students, in general, and ESP students, in particular. Based on this approach, students' needs are not to be interpreted in terms of what they are supposed to do with language in the last stage; rather, they should really be considered in terms of the strategies which students use in the process of language learning until they reach to the objectified behavior.

It is also believed that such an approach to ESP which involves the learner's repertoire of learning strategies in the L2 permits for a more psycholinguistically motivated view of learning (e.g., Anderson, 1991; O'Malley &Chamot, 1989).

The above-mentioned point does not have to be taken as another extremist view

to ignore the results obtained from register analysis or discourse analysis. It only tries to lead our attention to one of the forgotten aspects of language learning and teaching, the mental processes involved in the learners' minds to come up with the final product. Generally speaking, ESP courses should then incorporate presentation of not only linguistic and textual features, but also appropriate learning strategies.

Oxford and Nyikos(1989) stated that learning strategies are operations employed by learners to help the acquisition, storage, and retention of information. Beyond the language learning contexts, researches done on the comparisons between experts and novices indicate that experts use more organized and beneficial problem-solving and native-language reading comprehension strategies (Wenden, 1991). A similar finding occurs with more successful language learners as compared to less successful ones (Bialystok, 1990). Better language learners typically make use of strategies suitable to their own level, personality, age, aim for learning the language, and kind of language (Politzer, 1983).

Better language learners use different kinds of learning strategies such as 'cognitive strategies' to practice planning, arranging, focusing, and evaluating their own learning process; 'social strategies' to have an interaction with others and controlling discourse; 'affective strategies' for directing feelings, motivations and attitudes to learning; and 'compensation strategies' as guessing unknown meanings while listening and reading) to overcome deficiencies in knowledge of the language(Oxford, 1989; Wenden, 1991). Useful learning strategies help explain the performance of good language learners; likewise, inappropriate learning strategies lead to the understanding of the failures ofpoor language learners and the seldom weaknesses of good ones (Rubin, 1987).

In view of the vital role which learning strategies play, the present study was carried out: (1) to identify the relationship between those strategies and variables such as fields of study, sex, and language proficiency; (2) specify the appropriate strategies used by successful language learners; and (3) recommend ways for more useful syllabus design and teaching techniques for ESP courses in each field.

1.1. Statement of Problem
The present study was inspired by the following notions:

(a) Students are dealing with language learning by means of various learning strategies (Hudson, 1991; Widdowson, 1983),

(b) Learning best happens when such strategies are in line with learners' field of study (Widdowson, 1983), and

(c) Application of language learning strategies is related to such factors as fields of study, "sex", and language proficiency (Oxford, 1989).

To do so, the present research was conducted to find answer to the following research questions:

1. Is there any significant difference in strategy use across different fields of study and does the variable sex affect the results?
2. Is there any significant difference in the use of strategy among students with different proficiency levels?
3. How students view their language needs across different fields of study?

2. Review of the Literature
Learners' needs are said to be different in the eyes of various researchers and specialists, with respect to the approach they use. To this end, three approaches were identified to the analysis of learners' needs: the language-centered approach, the skills-

centeredapproach, and the learning-centered approach (Hutchinson & Waters, 1987).

The proponents of the first approach view ESP as primarily a language or structure issue identifying a special language with a special grammar, register, and/or rhetorical structures (Swales, 1990). In this approach, materials may be organized around grammatical and lexical features of a text or organizational patterns such as comparison and contrast, or classification, which have been identified through target context analysis (Trimble, 1985).

It was later argued that although the language-centered approach has exerted a great contribution to ESP by means of register and discourse analysis, it has an important drawback. This approach leaves the learner out of account and ignores the fact that comprehension is the result of interaction between the learner and the text (Hudson, 1991). To compensate the problem, experts proposed a skill-centered approach to ESP syllabus design, materials development, and methodology (e.g. Widdowson, 1981).

Those who advocate the skill-centered approach believe that students who participate in ESP classes are generally at the intermediate or sometimes an advanced level; that is, they already have a fundamental competence in English, so our first objective is to give them practice in English-related skills (Jordan, 1997). For instance, they claim that in the area of reading comprehension we should use such skills as skimming, scanning, inferencing, predicting, reference locating, etc. (Hudson, 1991).

Hutchinson and Waters (1987) find this approach insufficient because it, like the previous approach, does not take the learner into full consideration. Moreover, it is too much focused on the target context (Hutchinson & Waters, 1987). Another

main disadvantage to this approach is that there are no identifiable unitary skills upon which to found an approach. "Skills" such as skimming, scanning, etc. are not unitary (Lunzer, Waite, & Dolan, 1979). Similar findings have been also reported in the literature by Hudson (1990).

The third one was referred to as the learning-centered approach to heed the mental processes in the mind of the learner that bring about interaction, comprehension, and learning(Kumaravadivelu, 1994). The language-centered and the skill-centered approaches were called as product-oriented, but the advocates of the new approach called it a process-oriented approach to analyze the learners' needs in an ESP context (Widdowson, 1983).

Widdowson (1983) rejected the first two approaches to ESP on the grounds that they both fail to pay attention to the learning side of language learning process and argued that learners' needs are actually what they need to do with the language to activate the mental processes that make learning possible.

As for language learning strategies (LLS), they have been defined as cognitive operations, processes, procedures, and heuristics that learners apply to the task of learning a second language (Oxford, 1990). There are several classifications of LLS proposed by different scholars, but, in the present study, the one presented by Oxford (1990) was considered as the cornerstone. This classification contains direct and indirect strategies. Direct strategies are those behaviors involving direct use of the language; memory strategies for entering information into memory and retrieving it; cognitive strategies used to handle the language for reception and production of meaning; and comprehension strategies for overcoming limitations in existing knowledge. Indirect strategies support language learning although they do not

directly involve using the language; metacognitive strategies for organizing and evaluating learning; affective strategies for managing feelings and attitudes; and social strategies for learning with others (Oxford).

Some argued that LLS enhance language learning and help develop language competence as bounced back in the learner's skills in listening, speaking, reading, or writing the L2 or FL (e.g., Kasper, 1997; Oxford &Ehrman, 1995). Scholars also believe that LLS should be incorporated in language teaching programs in that they have been found to be teachable (Oxford &Ehrman, 1995; Richards, 1990). O'Malley, Chamot, Stewner-Manzanaraes, Kupper, and Russo (1985) indicate that strategy training is both possible and effective for the purpose of teaching listening and speaking.

In sum, one can conclude that ESP should be presented on a broad base. That is, while taking advantage of the contributions made by both the language-centered and skills-centered approaches, ESP course designers and practitioners are to utilize the insights provided by work in strategy instruction.

They should determine students' needs in terms of register, discourse, and skills, on the one hand, and the appropriate learningstrategies they need to activate to use the language both accurately and appropriately in their field, on the other.

3. Method

In view of the vital role which learning strategies play in the development of language proficiency, the present study was conducted to: (1) determine the relationship between these strategies and such variables as field of study, sex, and language proficiency; (2) specify the strategies employed by successful learners; and (3) suggest ways for better and useful materials development for General English, ESP, and EFL classes.

3.1. Participants
Participants in this study were 200 male and female ESP/EFL Iranian students studying different branches of knowledge at different universities of Sistan and Balluchestan Province. There were also 25 professional English teachers. Table1 presents the specification of the students taking part in this study in terms of field of study, number, and sex.

3.2. Instrumentation
3.2.1. The Strategy Inventory for Language Learning (SILL)
The SILL has two versions. It has an 80-item version for English speakers learning a foreign language and a 50-item version for learners of English as a second or foreign language (Oxford &Ehrman, 1995). The 50-item version of the SILL has been reported in the literature to have strong predictive and document validity as related to language performance and sensory preference (Oxford &Ehrman, 1995). Here students are asked to read and react to a number of strategy explanations (for example, *"I make associations between new material and what I already know"*). In terms of how often they use the strategies, they stated such views as "always or almost always", "generally", "sometimes", "generally not" or "never or almost never".

In fact, the Strategy Inventory for Language Learning (SILL) is developed to get information about how foreign or second language learners are dealing with that language. The 50-item version of the SILL utilized in the present study containsthe following 6 elements: 1. Memory Strategies: 9 items; 2. Cognitive Strategies: 14 items; 3. Compensation Strategies: 6 items; 4. Metacognitive Strategies: 9 items; 5. Affective Strategies: 6 items; 6. Social Strategies: 6 items.

Table 1. *Participants' Specification*

No.	Field of Study	Total Number	Sex		Length of study	
			Male	Female	First Year	Fourth Year
1.	Medicine	48	20	28	22	26
2.	Sciences	45	22	23	25	20
3.	Engineering	33	18	15	17	16
4.	Humanities	40	22	18	23	17
5.	English	34	15	19	16	18

Since the majority of the students participating in this study were studying other fields of study, rather than English, the SILL was translated into Persian.

3.2.2. The TOEFL Test

The TOEFL test used in this study was a test administered previously and was released by the Education Testing Service (ETS) in 1998. The test used comprised three sections: Listening Comprehension, Structure and Written Expression, and Reading Comprehension.

3.2.3. The Needs Analysis Questionnaire

To obtain students' views toward their language needs and programs, a 38-item questionnaire developed by BorzabadiFarahani (2000) was used. The questionnaire was then given to the students of Engineering, Medicine, Social Sciences, and Humanities for Completion. The categories included in the above-mentioned questionnaire were as follows:

A. Their ability in all the four language skills.

B. The effectiveness of the present ESP programs (both general ESP courses and the more specialized ones).

C. The necessity of having ESP courses as opposed to general English courses.

D. The time length of the present ESP programs.

E. Their need for English for success in their fields.

F. The priority they give to the various language skills and components in general.

G. The priority given to the various skills in a reading comprehension class.

H. The relevance of their ESP courses to their fields of study.

3.3. Procedures

Intact classes were randomly selected for the present study. Due to the registration limitations and patterns, the students in each field of study were selected differently. English teachers participating in this study were selected from among English teachers who were teaching at different universities of Sistan and Balluchestan Province.

To evaluate the participants' use of language learning strategies, the strategy inventory for language learning (SILL) was used. To determine the proficiency level of the subjects, the TOEFL test was utilized. A Needs Analysis Questionnaire was also used to obtain information about how ESP students see ESP courses and the relevance of these courses to their fields of study.

Both the SILL and the Needs AnalysisQuestionnaire were completed by the students at home. The subjects were told to answer the questions in the SILL and the Needs Analysis Questionnaire as quickly as possible to avoid students' bias toward the questions. Yet, the TOEFL test was given to the students in their own classes.

Table 2. *Between-Subject Effects for LLS, Field of Study, and Sex*
(First-Year Students): Two-Way ANOVA

Source	Sum of Squares	df	Mean Square	F	Sig.
Field Of Study	42890.775	4	10722.694	21.208	.000
Sex	918.227	1	918.227	1.816	.179
Group × Sex	6572.263	4	1643.066	3.250	.012
Error	150162.442	297	505.597		
Corrected Total	196580.971	306			

4. Results and Discussion

As stated earlier, the present study was carried out to specify the relationship between these strategies and such variables as field of study, sex, and language proficiency; to determine the strategies used by successful language learners; and to suggest ways for more effective syllabus design and teaching techniques for ESP courses in each major.

4.1. Language Learning Strategies, Field of Study, and Sex

The fields of study involved in this study were medicine, engineering, sciences, humanities, and English. On the whole, the participants were of two types: those in theirfirst year of college and those in their fourth year of college.

Table 2 shows the results of a two-way ANOVA run to measure the relationship between language learning strategies (LLS) and variables as field of study, sex, and their interaction for the first-year students. As the table shows, there is a statistically significant difference in strategy use between the fields of study, and sex does not have any effect on the results.

In fact, if the interaction of field of study and sex was discovered to be statistically significant, it was due to the field rather than sex as Tables 3 and 4 below present the Mean Square Comparison.

Table 3. *Field Mean Scores on the SILL*

Field	Mean	Std. Error
M1	100.262	2.674
E1	99.738	2.876
S1	103.254	3.292
H1	82.113	2.865
EN1	122.598	3.374

Note:
M1= First-Year Students of Medicine;
E1= First-Year Students of Engineering;
S1= First-Year Students of Sciences;
H1= First-Year Students of Humanities;
EN1= First-Year Students of English

Table 4. *Sex Mean Scores on the SILL*

Sex	Mean	Std. Error
Male	99.768	1.963
Female	103.418	1.866

Now, if field of study makes a difference, then the next step was to understand where the difference lay. To show this, the Tukey test was used and the results were given in Table 5. A close look at the table indicates that English students outperformed the students in all the other majors and that the students in all fields outperformed the students in the humanities. So, the Tukey test makes it clear that the group difference found in Two-Way ANOVA was related to the English major.

Table 5. *The Tukey Test: Multiple Comparisons of English-major Students'*
Performance on SILL With That of Non English Major Students

(I) Group	(1) Group	Mean Difference (I-1)	Std. Error	Sig.
M1	E1	2.3037	3.8026	.974
	S1	-207172	4.2544	.969
	H1	15.2862*	3.8734	.001
	EN1	-21.5864*	4.2816	.000
E1	M1	-2.3037	3.8026	.974
	S1	-5.0208	4.2661	.765
	H1	12.9826*	3.8863	.007
	EN1	-23.8901*	4.2933	.000
S1	M1	2.7172	4.2544	.969
	E1	5.0208	4.2661	.765
	H1	18.0034*	4.3293	.000
	EN1	-18.8692*	4.6981	.001
H1	M1	-15.2862*	3.8734	.001
	E1	-12.9826*	3.8863	.007
	S1	-18.0034*	4.3293	.000
	H1	-36.8727*	4.3561	.000
EN1	M1	21.5864*	4.2816	.000
	E1	23.8901*	4.2933	.000
	S1	18.8692*	4.6981	.001
	H1	36.8727*	4.3561	.000

* P < .05

To see how first-year students in all the five majors performed on the six subcategories of the SILL, the One-Way ANOVA was used. The results are given in Table 6.

Table 6 clearly demonstrates that there was a statistically significant difference between theperformances of the majors on the subparts of the SILL. That is the English students' performance appeared to be significantly better than that of the students in the other fields in almost all parts of the questionnaire except Part A in which it was only significantly better than that of the students in the humanities. The performance of the humanities students seemed to be the worst of all.

Table 6. *First-Year Students' Performance on the Subparts of the SILL*

		Sum of Squares	df	Mean Square	F	Sig.
Part A	Between	358.57	4	89.514	3.886	.004
	Within Groups	6956.438	302	23.035		
	Total	7314.495	306			
Part B	Between	4312.270	4	1078.067	18.691	.000
	Within Groups	17418.447	302	57.677		
	Total	21730.717	306			
Part C	Between	461.525	4	115.381	7.571	.000
	Within Groups	4602.195	302	15.239		
	Total	5063.720	306			
Part D	Between	2669.892	4	667.473	15.849	.000
	Within Groups	12718.975	302	42.116		
	Total	15388.866	306			
Part E	Between	446.641	4	111.660	9.674	.000
	Within Groups	3485.614	302	11.542		
	Total	3932.254	306			
Part F	Between	1042.400	4	260.600	12.747	.000
	Within Groups	6174.187	302	20.444		
	Total	7216.586	306			

* $P < .05$

Note: Part A: Memory Strategies; Part B: Cognitive Strategies; Part C: Compensation
Strategies; Part D: Metacognitive Strategies; Part E: Affective Strategies, Part F: Social Strategies

Table 7. *Between-Subject-Effects for LLS. Field of study, and sex*
(Fourth-year students): Two-Way ANOVA

Source	Sum of Squares	df	Mean Square	F	Sig.
Field of study	16405.539	4	4101.385	5.242	.000*
Sex	458.898	1	458.898	.586	.444
Field of study X sex	4059.172	4	1014.793	1.297	.271
Error	217521.136	278	782.450		
Corrected Total	240237.944	287			

* $P < .05$

To see the fourth year students' performance on the SILL, some statistical analyses were run. Table 7 below resembles the results of a Two-Way ANOVA to pinpoint the relationship between SILL and such variables as field of study, sex, andtheir interaction for the fourth-year students.

As Table 7 puts it forward, there was astatistically significant difference in strategy use between the fields of study, and sex does not affect the results. Of course, if the interaction of field and sex was found to be statistically significant, this was because of the effect of field rather than sex (see the Mean Score Comparison in Tables 8 and 9 below to get more information on the issue).

Table 8. *Field Mean Scores on the SILL*

Field of study	Mean
S4	94.361
H4	93.068
EN4	119.765
M4	101.139
E4	102.829

Note:
S4: Fourth-year students of Sciences
H4: Fourth-year students of Humanities
EN4: Fourth-year students of English
M4: Fourth-year students of Medicine
E4: Fourth-year students of Engineering

Table 9. *Sex Mean Scores on the SILL*

Sex	Mean
Male	101.821
Female	100.736

Table 10. *The Tukey Test: Multiple Comparisons of Students'*
Performance on SILL

(I) group	(1) group	Mean Difference(I-1)	Std. Error	Sig.
S4	H4	3.0509	5.7897	.985
	EN4	-23.4701*	6.0799	.001
	M4	-6.0385	5.2019	.774
	E4	-6.6885	5.4192	.731
H4	S4	-3.0509	5.7897	.985
	EN4	-26.5210*	5.9013	.000
	M4	-9.894	4.9920	.361
	E4	-9.7394	5.2180	.336
EN4	S4	23.4701*	6.0799	.001
	H4	26.5210*	5.9013	.000
	M4	17.4316*	5.3258	.009
	E4	16.7816*	5.5382	.021
M4	S4	6.0385	5.2019	.774
	H4	9.0894	4.9920	.361
	EN4	-17.4316*	5.3258	.009
	E4	-.6500	4.5571	1.000
E4	S4	6.6885	5.4192	.731
	H4	9.7394	5.2180	.336
	EN4	-16.7816*	5.5382	.021
	M4	.6500	4.5571	1.000

*P < .05

To specify the location of the difference in terms of the students' majors, the Tukey Test was used. The results are given in Table 10 below:

Table 10 obviously demonstrates that the English students' performance was better than the other fields. One can understand that there was no significant difference between M4, E4, S4, and H4. The H4 students, similar to H1 students in Table 5, were the weakest group.

To point out the fourth-year students' performance on the subparts of the SILL, another one-way ANOVA was run. The results of this analysis are presented in Table 11 below.

Table 11 shows that the students' performance in all majors was significantly different on the subcategories of the SILL except parts E and F in which the difference was also close to the significance level.

Table 11. *Fourth-Year Students' Performance on the Subparts of the SILL*

		Sum of Squares	df	Mean Square	F	Sig.
Part A	Between Groups	288.555	4	89.514	2.708	.031
	Within Groups	7539.098	283	23.035		
	Total	7827.653	287			
Part B	Between Groups	2254.858	4	1078.067	7.163	.000
	Within Groups	22271.128	283	57.677		
	Total	24525.986	287			
Part C	Between Groups	395.382	4	115.381	5.611	.000
	Within Groups	4985.698	283	15.239		
	Total	5381.080	287			
Part D	Between Groups	1268.689	4	667.473	5.600	.000
	Within Groups	16029.891	283	42.116		
	Total	17298.580	287			
Part E	Between Groups	111.858	4	111.660	2.198	.069
	Within Groups	3599.722	283	11.542		
	Total	3711.580	287			
Part F	Between Groups	258.323	4	260.600	2.249	.064
	Within Groups	8125.896	283	20.444		
	Total	8384.219	287			

* $P < .05$

4.2. Results Related to theSecond Research Question

To measure the corresponding hypothesis due to the third research question, correlationalanalyses were used. The fourth-year students of English, Medicine, and Engineering were divided into three groups using the TOEFL test. Those who answered up to 34% of the TOEFL questions were considered as the weak group; those who succeeded to answer 35% to 69% of the questions were assigned to the moderate group; and those who were able to answer 70% or above were assigned to the advanced group. The results using correlational analyses between TOEFL scores and SILL scores are given in Tables 12, 13 and 14; respectively in terms of each group.

Table 12. *Correlation between TOEFL Scores and SILL Scores: Weak Group*

		Part A	Part B	Part C	Part D	Part E	Part F	Total Q1	TOEFL
Part A	Pearson Correlation Sig. (2-tailed)	1.000	.834** .001	.786** .004	.635* .036	.434 .182	.642* .033	.856** .001	.217 .522
Part B	Pearson Correlation Sig. (2-tailed)		1.000	.691* .019	.773** .005	.549 .080	.713* .014	.944** .000	.199 .557
Part C	Pearson Correlation Sig. (2-tailed)			1.000	.343 .302	.205 .546	.253 .452	.625* .040	.368 .266
Part D	Pearson Correlation Sig. (2-tailed)				1.000	.753** .007	.791** .004	.894** .000	-.221 .513
Part E	Pearson Correlation Sig. (2-tailed)					1.000	.770** .006	.737** .010	-.413 -.207
Part F	Pearson Correlation Sig. (2-tailed)						1.000	.853** .001	-.381 .248
Total Q1	Pearson Correlation Sig. (2-tailed)							1.000	-.037 .913
TOEFL	Pearson Correlation Sig. (2-tailed)								1.000

** p< .01   *p<.05   Total Q1= Total Score on SILL questionnaire.

Table 13. *Correlation between TOEFL scores and SILL scores: Moderate Group*

		Part A	Part B	Part C	Part D	Part E	Part F	Total Q1	TOEFL
Part A	Pearson Correlation Sig. (2-tailed)	1.000	.617** .000	.293* .021	.326** .010	.460** .000	.481** .000	.725** .000	-1.45 .262
Part B	Pearson Correlation Sig. (2-tailed)		1.000	.466* .000	.519** .000	.330** .009	.608** .000	.870** .000	-.027 .836
Part C	Pearson Correlation Sig. (2-tailed)			1.000	.367** .003	.349** .005	.371** .003	.615** .000	.187 .147
Part D	Pearson Correlation Sig. (2-tailed)				1.000	.369** .003	.430** .000	.741** .000	.114 .380
Part E	Pearson Correlation Sig. (2-tailed)					1.000	.463** .000	.591** .000	.001 .994
Part F	Pearson Correlation Sig. (2-tailed)						1.000	.753** .000	.061 .637
Total Q1	Pearson Correlation Sig. (2-tailed)							1.000	.037 .777
TOEFL	Pearson Correlation Sig. (2-tailed)								1.000

** $p < .01$ * $p < .05$

A critical examination on the last three Tables indicates that there is no significant relationship between strategy use and language proficiency (all the three levels) in this study. One can observe that the data presented in these Tables confirmed hypothesis 3.

4.3. Results Related To the Third Research Question
In order to get the students' ideas about their own needs, a 38-item questionnaire developed by BorzabadiFarahani(2000) was used. The questionnaire, then, was given to the students of engineering, medicine, sciences, and humanities for completion.

Table 14. *Correlation between TOEFL Scores and SILL Scores: Advanced Group*

		Part A	Part B	Part C	Part D	Part E	Part F	Total Q1	TOEFL
Part A	Pearson Correlation Sig. (2-tailed)	1.000	.589** .000	.092 .446	.675** .000	.534** .000	.629** .000	.798** .000	.028 .817
Part B	Pearson Correlation Sig. (2-tailed)		1.000	.401* .001	.644** .000	.500** .000	.597** .000	.861** .000	-.116 .338
Part C	Pearson Correlation Sig. (2-tailed)			1.000	.279** .020	.249** .038	.368** .002	.467** .000	-.063 .607
Part D	Pearson Correlation Sig. (2-tailed)				1.000	.511** .000	.653** .000	.862** .000	.009 .939
Part E	Pearson Correlation Sig. (2-tailed)					1.000	.471** .000	.687** .000	-.037 .763
Part F	Pearson Correlation Sig. (2-tailed)						1.000	.810** .000	.089 .465
Total Q1	Pearson Correlation Sig. (2-tailed)							1.000	-.058 .633
TOEFL	Pearson Correlation Sig. (2-tailed)								1.000

The questionnaire was designed to extract students' views and evaluations about their language needs in terms of seven topic categories; that are, self-evaluation of ability in the four language skills, effectiveness of the present ESP programs, necessity of having ESP courses as opposed to general English, need for English for success in the field, priority that students give to various language skills or components, and relevance of students' ESP courses to their fields of study.

Regarding the first category, students in the above-mentioned majors ranked their language skills from their strongest to the weakest as: reading, (four language skills) writing, listening, and speaking. Most of the students evaluated their four language skills as "medium".

As to the second topic and to see if ESP courses are useful in the development of students' overall language ability, they expressed three different viewpoints: some expressed that the present ESP courses have a neutral effect emphasizing that such courses did not help them at all; some others saw a positive effect of ESP courses; and the rest stated that ESP courses had deteriorated their English knowledge (negative effect).

Concerning the third category, the subjects manifested their ideas in terms of viewpoints; namely, "For the ESP Group" and "The Against ESP Group". However, most of the students, believed that ESP courses should be kept apart from general English courses.

In regard to the next topic, time length of the present ESP programs, engineering and science students believed that time length of the present ESP course is not enough, while medicine and humanities students expressed a fifty-fifty idea about the time length of such courses.

As to the next category, the majority of students considered English as a means to pave the way for more programs in their own fields of study.

Considering the next topic, priority that students give to various language skills or components, students in all four majors gave their first priority to R/C(reading comprehension), the second priority was given to VOC(vocabulary) except the medicine students whose second priority was SP(speaking); priority number three was given to SPexcept the medicine group whose third preference was VOC; for medicine and science students, the fourth priority was L/C(listening comprehension) while for engineering students Wr(writing) and for humanities Gr(grammar) was prioritized; in terms of the fifth priority, engineering and humanities students preferred L/C, medicine group prioritized Gr, and science students preferred Wr. For the last priority, engineering and science students selected Gr but medicine and humanities group tended to prefer Wr.

Finally, considering students' ESP courses to their fields of study, more than half of the students did not think what they had studied as ESP had much to do with their majors. This was true not only for the whole students in this study but also for the students in each field of study. In sum, all the students participating in this study believed that ESP courses should be modified in terms of all the seven categories stated before.

5. Conclusions

Performance comparison of the students in five fields of study (medicine, engineering, science, humanities, and English) revealed that there was a significant difference in strategy use between the students across the fields of study. The difference existed not only between the fourth-year students across those fields but also between first-year students across the same fields.

As a striking point, the further analysis indicated that the group difference for both of the first year and second-year students was fundamentally due to the performance of the English students who outperformed the students in the other fields. And apart from the humanities students who were significantly worse than the other students when the comparison was made for the first-year students, there was no difference between the other fields (medicine, engineering, and science). However, the fourth-year students' performance was compared; no significant difference in strategy use was found between the fields of medicine, engineering, science, and humanities. In fact, it was only the English students who were superior to all others.

No significant difference was also found to exist between the performance of females and that of males for both first-year and fourth-year students indicating that sex does not seem to have a mediating effect on the relationship between field and strategy use.

The findings above seem to imply that when developing ESP materials, we should not differentiate between the fields of study and the sexes from the strategy-teaching point of view. We can also, of course, with a great deal of caution, conclude that none of the four fields of medicine, engineering, science, and humanities seem to help develop one's aptitude for language learning at least from a language learning-strategy point of view.

To see if language proficiency was related to strategy use, the correlation coefficient between the two was calculated. Much to our surprise, the value turned out

to be a very poor one. So, the English students were better in strategy use than the other students not because they were more proficient. The only logical explanation could be offered to account for the different strategy use behavior of the English students was that they were simply students of English. More specifically, those who are attracted to the English field may have some sort of mentality that makes them apt for language learning.

Hence, if we assume that the best language learners are those who are mentally prepared for the task and haveshown signs of success in their fields, then a successful language learner in terms of strategy use would be one who uses the same strategies that are employed by proficient students of English.

To examine how students view their language needs across different fields of study, the fourth-year students of medicine, engineering, science, and humanities were asked to express their own ideas about the present status of ESP courses in the universities. After having the students' responses to the questions in the questionnaire, one can understand that our ESP courses have not been helpful because they are a lot far off the students' needs and expectations.

6. Pedagogical Implications
6.1. Implications for Syllabus Design
The findings of the present study seem to imply that language learning strategies are to be taken into account as part of the contents of ESP courses because such strategies are found to be teachable (Lessard-Clouston, 1997). Since the English students were found to be the most gifted group for language learning in terms of LLS, so such strategies can be presented to other students in other fields.

Considering the responses given by the students of medicine, engineering, science, and humanities to the items in the Needs Analysis Questionnaire, syllabus developers can extend the time length of ESP courses so that strategy teaching can be incorporated into the program. Since many ESP students show their interests in oral skills, it seems suitable to include listening and speaking tasks in ESP programs. In ESP classes inwhich the primary objective is the development of the reading skills, it seemsreasonable to incorporate such activities into the program as preferred by the ESP students.

6.2. Implications for Testing
Test developers can think of including test items which are designed to test language learning strategies. For example, in a reading test, they can have more word-guessing type questions. Also test developers can make use of different modes of item presentation as graphs, tables, pictures, etc instead of using the written mode of presentation.

7. Suggestions for Further Research
The following questions can be considered as suggestions or questions for further research:
1. Do language learning strategies and learning syllabus load on different factors?
2. Does the inclusion of listening and speaking-oriented tasks in ESP classes increase or decrease the students' motivation?
3. Does the inclusion of listening and speaking-oriented activities in ESP reading classes have a positive or negative effect on the promotion of the reading skills?

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