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A Close Study of the Effects of ESP Learners' Beliefs on the Choice of Language Learning Strategies

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Abstract. This study investigated the use of language learning strategies by 175 Iranian learners majoring in non-English fields (Engineering, Humanities, and Sciences). The study attempted to test the relationships among learners' beliefs about English language learning, English proficiency, and the use of language learning strategies. Data were collected through known questionnaires and learners' institutional records. Results of Friedman test showed that metacognitive strategy use was at the highest rank while affective strategy use was at the lowest. Kruskal–Wallis test results revealed that metacognitive strategies were most frequently used by Engineering and Science students whereas compensatory strategies were mostly preferred by students in the humanities. Affective strategies ranked lowest on the three groups of students' preference scale. Furthermore, more proficient learners utilized cognitive, memory and compensatory strategies whereas students with poor language proficiency resorted to compensatory strategies. Moderate positive correlation between students' beliefs about English language learning and their use of learning strategies were found. Analysis of linear regression showed that use of strategies was predicted from language proficiency and learners' beliefs about language learning. The present study suggests that not only do students' beliefs about language learning influence their use of learning strategies, but also their level of English proficiency affects the frequency of use and choices of learning strategies.

Keywords: language learning strategies; beliefs about language; language proficiency; ESP; TEFL

Introduction

With the emergence of communicative approach in the 19th century, traditional curriculum encountered a shift from teacher-centered approach to student-centered approach. This framework focuses on student needs, abilities, styles, and strategies. In non-English speaking countries including Iran, there are some English for

specific purpose courses on the universities curricula to meet students' needs to read field-specific texts in English as they are necessary for academic and professional purposes. This can sometimes become very troublesome for students with low language proficiency. Such courses assist learners to develop their target reading skills. Successful language learners in English as a foreign language (EFL) context are able to use a variety of language learning strategies (LLSs) to facilitate their learning (O'Malley, 1987; Cohen, 1998). LLSs refer to those techniques, principles or rules that learners utilize to learn, solve problem, and complete a task independently (Mercer & Mercer, 1998). A host of studies on the use of learning strategies (e.g., Dreyer & Oxford, 1996; Park, 1997; Grenfell & Harris, 1999; Harris, 2003; Wharton, 2000) demonstrate that learners consciously or unconsciously employ a variety of learning strategies.

Although research on investigating factors affecting strategy choice has highlighted gender (e.g., Ehrman & Oxford, 1989; Oxford & Nyikos, 1989), motivation (e.g., Oxford & Nyikos, 1989), nationality (e.g., Politzer & McGroanty 1985; O'Malley, 1987; Willing, 1988; Griffiths & Parr, 2001) and language proficiency (e.g., Green & Oxford, 1995; Khaldieh, 2000; Wharton, 2000) to be related to LLS use, there is a paucity of research exploring the relationship among the use of LLSs and learners' beliefs and language proficiency in ESP contexts which is the interest of this study.

Theoretical background

Language learning strategies

The origin of strategy term refers to the ancient Greek "strategia" meaning a high level plan to achieve one or more goals under conditions of uncertainty Language learning strategies have been defined by different scholars. Oxford (1990) defined LLSs as "operations employed by the learner to aid the acquisition, storage, retrieval, and use of information" (p. 8). She also believed that learners make use of LLSs "to make learning more enjoyable, more self-directed, more effective and more transferable to new situations" (p.8). Chamot (2004) claimed that LLSs are "the conscious thoughts and actions that learners take in order to achieve a learning goal" (p. 14).

Talking about the historical background of LLSs, O'Malley and Chamot (1995) argued that there was a shift in 60's and early 70's from the teacher-centered pedagogy to teaching practices that laid greater emphasis on learners and learning. This pedagogical shift helps learners to become cognitively active even in the absence of formal teaching (Littlewood, 1999). Corder (1981) claimed that learners who develop cognitive view of learning are more successful in utilizing appropriate strategies than those who do not do that.

Oxford (1990) classified language learning strategies into six sub categories: a) Cognitive strategies: used to manipulate language for identification, storage and retrieval of information, b) Metacognitive strategies: used for pre assessment,

preplanning, evaluation and post evaluation of language learning activities, c) Memory strategies: used to help learners to recall information like word association or semantic mapping, d) Compensation strategies: used to make up for a deficiency in learning, e) Affective strategies: used to mitigate leaner's anxiety, and f) Social strategies: used to facilitate learning by interaction with others.

Language learning strategies are thought to be linked to learners' beliefs about language learning. According to Richardson (1996) learners' beliefs are "psychologically held understandings, premises or propositions about the world that are felt to be true" (p. 103). The relationship between L2 learner's beliefs and learning strategies showed that L2 learner beliefs may influence and even limit the range of language strategies (Yang, 1999). Learners' beliefs are of paramount importance for their experience and success in language learning. Horwitz (1988) argued that when teachers are aware of learners' beliefs about language learning, they can properly recognize their expectations of, commitment to, success in and satisfaction with their English classes.

Language proficiency and language strategy use

O'Malley and Chamot (1990) pointed out successful language learners use strategies as means of active involvement to develop the target language communicative abilities. Some studies (e.g., Rubin, 1975; Stern, 1975; Oxford & Cohen, 1992; Chamot, 2004; Radwan, 2011) showed that successful language learners usually use LLSs in order to guarantee effective learning. Therefore, if less successful language learners are instructed appropriate LLSs, they can autonomously ensure their effective learning.

On the other hand, the Linguistic Interdependence Hypothesis implies that when reading proficiency is attained in one language, it can be transferred across any language (Cummins, 1979). However, Cummins (1981) claimed that in a real world educational setting L1 literary transfer does not occur in any case since based on Threshold Hypothesis, L1 transfer is possible once a threshold level of L2 proficiency has been attained. In other words, if learners tend to maintain their competence while reading in L2, they require attaining some threshold of L2 proficiency (Stock, 2012). She claimed that low proficient level learners in L2 may suffer from negative effects while learners with a high proficiency level in L2 develop positive cognitive effects.

Language proficiency affects strategy choice (Green & Oxford, 1995; Khaldieh, 2000; Wharton, 2000) but the relationship is more complex than a simple liner relationship between using language strategy and improving language proficiency while it is upon the type of strategy used (Suwanarak, 2012). For instance, Chen (1990) demonstrated that although Chinese EFL learners with high proficiency utilized LLSs more effectively than lower proficient learners, they employed fewer communicative strategies. However, no empirical study has been conducted to investigate there is a casual relationship between high proficiency level and LLSs

use. Therefore, it is not easy to determine whether strategy use enhances language proficiency or the opposite is true (MacIntyre, 2000). Ehraman and Oxford (1989) investigated the effects of cognitive strategies including looking for patterns and reading for pleasure in the target language that are more common for high proficient learners.

Furthermore, some scholars believed that learners' beliefs about language learning can contribute greatly to the language proficiency (e.g., Schommer, 1990; Wen & Johnson, 1997; Horwitz, 1999; Sakui & Gaies, 1999). The findings of an empirical study conducted in China supported this idea by revealing how learners' beliefs influence strategy use and language proficiency (Wen & Johnson, 1997).

The purpose of the present study was to investigate the relationship among language learning strategy use, learners' beliefs and learners' command of foreign language in an ESP context with non-English students of Engineering, Humanities and Sciences.

Methodology

Research questions

This study was basically a survey of learner-reported strategies of and beliefs about English language learning and it attempted to answer the following four questions developed based on the objectives of the study:

1. What is the relationship between beliefs, strategy use and language proficiency for the sampled Iranian ESP students?
2. Is there any relationship between their beliefs about English language learning and their use of LLSs?
3. Is there any relationship between their language proficiency and the choice of LLSs?
4. What are the most frequent language learning strategies used by these Iranian ESP learners?

Participants

The participants of the study were 175 Iranian university ESP learners (sampled from Tabriz University and Kashan University learners in 2014). This sample included male (111) and female (64) learners studying Engineering (25.1%), Sciences (37.7%) and Humanities (37.1 %). All the participants spoke Persian as the mother tongue. Their age ranged from 25 to 35. They were studying English for Specific Purpose (ESP) courses, as undergraduate and graduate students. Tables 1 demonstrate the characteristics of the sample. Since it was not possible to administer a TOEFL test as a standardized English test to all students participating in the study, the students' grade point average (GPA) in English courses was used as a measure of their level of language proficiency. Then their GPAs scores out of a total of 20 were divided into three groups: low-proficiency (10-13), mid-proficiency (13-17) and high-proficiency (17-20).

Table1. Demographic description of participants		
	Frequency	Percent
Gender		
Male	111	63.4
Female	64	36.6
Total	175	100.0
Education Level		
Undergraduate	101	57.7
Graduate	74	42.3
Major		
Engineering	44	25.1
Humanities	65	37.1
Sciences	66	37.7
GPA		
Low (10-13)	74	42.3
Mid (13-17)	96	54.9
High (17-20)	5	2.9

Instruments

For the current study two questionnaires were utilized with 36 statement items adapted from Horwitz' BALLI which is developed to assess learners' and educators' beliefs about different issues relating to language learning (Horwitz, 1987, 1988, 1999). This instrument covers five areas: (i) Foreign Language Aptitude; (ii) The Difficulty of Language Learning; (iii) The Nature of Language Learning; (iv) Learning and Communication Strategies; and (v) Motivations and Expectations. 49 statement items adapted from Oxford's (1990) SILL reflecting the frequency of strategy use on a five point (Likert) scale was the next instrument. The taxonomy of strategies consists of six broad categories of strategies: (i) Memory Strategies; (ii) Cognitive Strategies; (iii) Compensatory Strategies; (iv) Metacognitive Strategies; (v) Affective Strategies; and (vi) Social Strategies.

Both questionnaires were accompanied with a background questionnaire to collect students' demographic information such as gender, field of study, educational level and GPA in English courses. This study employed the Persian version of SILL and BALLI since students' low command of English could negatively affect data collection. It is suggested to use a translated version of the questionnaire in order to "avoid any problems participants could encounter in understanding the items and response scale" due to limited English proficiency (Khalil, 2005, p. 110). Cronbach's alphas for the 36 BALLI and 49 SILL items were .688 and .816 respectively. The two instruments were therefore reliable for the study.

Results

To determine the relationship among beliefs, strategy use and language proficiency, One-Sample Kolmogorov-Smirnov Test was conducted to evaluate the normality assumption of data from two questionnaires: SILL and BALLI. Kolmogorov-Smirnov test (K–S test) is a nonparametric test for the equality of continuous, one-dimensional probability distributions that can be used to compare a sample with a reference probability distribution (one-sample K–S test). Table 2 shows the sample size (N= 175) and a Mean of 3.69. (H0: the distribution of BALLI data is normal; H1: the distribution of BALLI data is not normal). Since the P value is less than .05, the normality assumption (H0) is rejected. In other words, there is no doubt that the data obtained by BALLI questionnaire was not normally distributed.

Table 2. One-Sample Kolmogorov-Smirnov test for beliefs and strategies

	BELIEF	STRATEGIES
N	175	175
Mean	3.6895	2.7472
Std. Deviation	.24953	.39882
Absolute	.169	.187
Positive	.136	.177
Negative	-.169	-.187
Kolmogorov	2.236	2.476
Asymp. Sig. (2	.000	.000

The results shown in table 2 also indicate that the data from SILL questionnaire was not normally distributed with the Sig value of .000. Since the variables of interest (belief and learning strategies) were not normally distributed, nonparametric correlations were calculated between pairs of samples. Spearman's Rank Correlation Coefficient is used as a non-parametric measure of association between the rankings of two variables measured on N individuals since it is not very sensitive to outliers. As table3 displays, a Spearman's Rank Order correlation was run to determine the relationship between 175 students' beliefs about language learning and the use of learning strategies. There was a positive correlation between students' beliefs and strategy use, which was statistically significant as shown in Table 3.

Table 3. Spearman's correlation between learners' beliefs and learning strategies

Spearman's rho		STRATEGIES	GPAS
Bbelief	Correlation Coefficient	.406**	.709**
	Sig. (2-tailed)	.000	.000
	N	175	175

Strategies	Correlation Coefficient	400**
	Sig. (2-tailed)	.000
	N	175

Results from the Spearman's correlation procedure for the relationship between language proficiency and learning strategies as shown in table 3, indicate that a relationship of moderate strength was found between the learners' language proficiency (GPAS) and the use of language learning strategies (rs (173) = .400, p <.01).
And also the results show that there is a statistically significant relationship between learner' belief and GPAS (r= .709, p = .000). In other words, there is a strong relationship between language proficiency and learner's belief.

Furthermore, Spearman's Rank Correlation Coefficient tests were used to investigate the relationship between five belief variables: Foreign Language Aptitude; The Difficulty of Language Learning; The Nature of Language Learning; Learning and Communication Strategies; and Motivations and Expectations and the six strategy variables: Memory Strategies; Cognitive Strategies; Compensatory Strategies; Metacognitive Strategies; Affective Strategies; and Social Strategies . In other words, some beliefs were found to either constrain or facilitate the use of particular language learning strategies. Data at the significant level of .01 and .05 indicated that the factors' scores of beliefs and strategies were significantly correlated, with correlation coefficients ranging from .053 to .648. Whereas the correlation between beliefs about foreign language aptitude and compensatory strategies was the weakest (r = .053), the strongest correlation was between the students' beliefs about motivation and the use of metaconitive strategies (r = .648).
To answer the second research question, regression analysis was run to predict students' use of LLSs (dependent variable) from the students' beliefs about language learning. The regression procedure revealed that the students' beliefs about English language learning predicted the students' use of language learning strategies, r^2= .051 (adjusted r^2 = .045). By examining the analysis of variance (ANOVA) reported in Table 4, the value of F (1, 173) = 9.248 was found statistically significant (p < .01). It suggests that there is a linear relationship between learners' beliefs and the use of language learning strategies.

Table 4. ANOVA: regression analysis predicts the outcome variable (strategy)

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.404	1	1.404	9.248	.003a
Residual	26.272	173	.152		
Total	27.676	174			

Table 4. ANOVA: regression analysis predicts the outcome variable (strategy)

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.404	1	1.404	9.248	.003a
Residual	26.272	173	.152		
Total	27.676	174			

a. Predictors: (Constant), BELIEF
b. Dependent Variable: STRATEGIES

To answer the third question and find out whether learning strategies are predicated from L2 proficiency as measured by students' GPAs, a regression analysis was performed on students' data. The results showed that language proficiency predicted the students' use of language learning strategies, $r^2 = .121$ (adjusted $r^2 = .116$). As shown in Table 5, the value of F (1, 173) was 23.776 that was statistically significant ($p < .01$). This suggests that there is a linear relationship between learners' GPAs and their use of language learning strategies.

Table 5. ANOVA: regression analysis predicts the outcome variable (strategy)

	Sum of Squares	df	Mean Square	F	Sig.
Regression	3.344	1	3.344	23.776	.000a
Residual	24.332	173	.141		
Total	27.676	174			

a. Predictors: (Constant), Level of Language
b. Dependent Variable: STRATEGIES

Table 6. Friedman Test to show the mean ranks between strategies

strategies	Mean Rank
Memory	4.00
Cognitive	1.76
Compensatory	3.71
Metacognitive	4.61
Affective	3.77
Social	3.16
Chi-Square	237.913

df	5
Asymp. Sig.	.000

The analysis of Kruskal-Wallis test revealed statistically significant differences among students whose proficiency in English was rated as "high-proficiency", "mid-proficiency" and "low-proficiency" through their GPAs data in the use of cognitive, metacognitive, compensatory and social strategies. To determine the differences between strategies used by all participants, Friedman test was used as a non-parametric test because of the non-normality in the distribution of the data. The mean rank between the related strategies calculated by Friedman Test indicates how they differed. metacognitive strategies ranked the highest while cognitive strategies ranked the lowest. The results show that there was a statistically significant difference in the use of different strategies ($\chi 2 = 237.913$, $p = .000$). Metacognitive strategies ranked maximum ($M = 4.61$) while the minimum use of strategies was attributed to cognitive strategies ($M = 1.76$).

Discussion and conclusion

The learners studied in this work were medium strategy users since the total mean strategy use was 2.7. This result of the study corroborates that of Noguchi (1991), Yang (1994), Oh (1992), Park (1997) and Wharton (2000). Results of the study demonstrated that, as a whole, metacognitive strategies were the most frequently used learning strategies whereas cognitive strategies were the least preferred category. Students of Engineering favored the use of metacognitive, cognitive and compensatory strategies while students of Humanities used more compensatory, affective and memory strategies.

The most frequent use of metacognitive strategies by Engineering students may be due to the fact in EFL contexts there is not much exposure for the learners to acquaint themselves with it subconsciously. Compensation strategies, such as looking up unfamiliar vocabulary in a dictionary and analyzing the prefixes and suffixes of new words, were most frequently used by Humanities students. The reason might have been their lower levels of linguistic capability causing them to turn to their strategic competence to compensate for any linguistic deficiency.
The regression model used to analyze students' data showed a linear relationship between the use of learning strategies by different proficiency groups which supports similar findings (e.g. Green and Oxford, 1995; Khalil, 2005; Wharton, 2000). Oxford and Nyikos (1989) believe that language proficiency can be either the effect or the cause of strategy use.

In conclusion, this study has demonstrated that ESP learners in the Iranian context explored here are medium strategy users and that there is a prominent role for language proficiency to play in the use of strategies. On the whole, the higher the level of language proficiency, the larger the frequency of learning strategies reported by learners. The significance of strategy instruction in ESP classrooms, familiarizing learners with various strategies, and considering the low levels of

language ability in this instruction is the main point this study can highlight through appropriate instruction.

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