

## **The Role of Motivation in ESP Reading Comprehension Test Performance**

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### **Abstract**

The purpose of this study was to investigate the role of motivation in ESP reading comprehension tests at the university level in Iran. For the study, 245 students from different majors ( literature, economics, medicine, electronics and chemical engineering) participated in the project. In addition to the motivation questionnaire, the participants in each major took a battery of reading comprehension tests related to their own content area knowledge, namely, major-specific technical English (EST) tests. The obtained data were subjected to different statistical analyses. The findings revealed , First, that motivation is significantly related to the test performance of the participants, and second, the English literature major students had a higher motivation in test performance than those in other majors. The results have some implications for TEFL at the university level.

**Key Words:** ESP Reading Comprehension; Specific Purpose Tests; Motivation; Test Performance

### **1. Introduction**

Developments in applied linguistics have led to remarkable advancements in other areas of language education. In addition to knowledge about language, both teaching and testing of language have been influenced by socio-psychological factors that learner bring to the learning situation. It has long been argued that individual learner factors may contribute differentially to the learner's ability to acquire a second language (Skehan, 1998). Moreover, test takers' characteristics such as content and general

schemata, personal attitudes, educational variables, etc. are believed to have significant effect on their test performances. The significance of the issue, both in teaching and testing, motivated this research to be conducted.

## **2. Theoretical Backgrounds**

A quick glance at the available literature shows that individual learner characteristics influence L2 learning (Skehan, 1989; 1998); it has been demonstrated that apart from communicative language ability, certain test-taker characteristics may affect the extent to which testees are able to perform satisfactorily on language tests (Bachman, 1990). Research indicates that, in addition to language knowledge, personal attributes of test takers have a significant effect on test score variation. Most of the research has focused on the correlation between test takers' demographic characteristics such as age, gender, cultural background and language background on the one hand and testees performance, on the other. (e.g. Farhady, 1987 & 1982; Kunnan 1990 & 1995; Elder 1995; Brown 1999; Ryan & Bachman, 1990).

Another line of research has examined the type of relationship between the test takers' topical knowledge and test performance. For instance, there have recently been many inquiries into the relative contributions of background knowledge and language proficiency to students' reading test scores at university-level (Alderson & Urquhart, 1985a; Hudson, 1993; Clapham, 1993 & 1996; Ginther & Grant 1997; Jensen & Hansen 1995; Douglas, 2001; Tavakoli, 2004).

A third line of research at the same time, has focused on the socio-psychological and strategy-use characteristics of test takers and their influence on their test performance. These studies investigated students' performance vis-a-vis cognitive styles (e.g. Hansen & Stansfield 1984; Chapelle 1988) and attitudes toward language learning (e.g. Gardner 1985a & 1988; Zeidner & Bensoussan 1988). Many investigations have also looked at the role of motivation and the degree to which test takers are willing to devote time and effort to language learning (e.g. Gardner &

Lambert 1972; Gardner 1985 & 1988; Kunnan 1995; Dornyei & Schmidt 2001). As noted by Purpora (2004, p. 93), “These socio-psychological and strategic factors, alone or in combination with other personal attributes, may have a significant impact on test scores ...” This is to say, language knowledge is likely to be a necessary factor in good language learning or good test performance, but it is not a sufficient one.

### **3. Motivation**

By definition, motivation can be commonly thought of as “an inner drive, impulse, emotion or desire that moves one to a particular action” (Brown, 1994, p. 114). Gardner (1985a) defined motivation as ‘the extent to which an individual works or strives to learn the language because of a desire to do so and the satisfaction experienced in this activity’ (p. 10). Purpora (2004, p. 94) analyzed Gardner’s definition as having the following components: (1) motivational intensity or effort expended to learning the language, (2) a desire to learn the language, and (3) a positive attitude towards learning the language.

The incorporation of motivation into second language learning models, according to Spolsky (2000), “has been a major contribution of social psychologist, especially Wallace Lambert and Robert Gardner” (p. 157). By reference to Carroll’s model of instruction, Spolsky asserts that in addition to language, his model regards aptitude, motivation and exposure as important factors in second language learning (2000, p. 158). Motivation is derived from a learner’s language orientation and attitude, and is regarded as a key element of language learning.

Ellis (1986, p. 118) argues that the most extensive investigation into the role of motivation in second language learning has been done by Gardner and Lambert. Gardner and Lambert (1972) define ‘motivation’ in terms of the L2 learner’s overall goal or orientation, and ‘attitude’ as determination, demonstrated by the learner attempting toward a goal. Gardner and Lambert argue that there is no

## 102 The role of motivation in ESP reading comprehension

reason to anticipate an affinity between motivation and attitude, however; motivation is influenced by attitude toward a learning task. A distinction has also been made between attitudes and motivation by Brown (1981). Indeed, Brown identifies three kinds of motivation: global motivation, (general in nature) situational motivation, which has a direct bearing on the situation in which learning occurs; and task motivation, which is appropriate for performing particular learning tasks. Brown's second category of motivation is a new one, while the third seems to be synonymous with Gardner and Lambert's 'attitudes'. However, there is no consensus among scholars about what exactly 'motivation' or 'attitudes' consist of, and nor is there any agreement on the relationship between the two (Ellis, 1986).

Moreover, Gardner and Lambert (1972) make a distinction between instrumental and integrative motivation. Instrumental motivation refers to a learner's desire in learning a language for utilitarian purposes (such as employment or travel while integrative motivation is the desire to learn a language for learners to integrate successfully into the target language community. Lambert (1969) did not propose that integrative motivation would lead to faster or better language learning. Rather he suggested that the development of native-like pronunciation and semantic system may lead to a concern for loss of identity on the part of the learner (See Spolsky, 2000; for further information).

However, in terms of methodology, Spolsky (2000, p. 160) questions the reliability of direct questionnaires for ascertaining the integrativeness and instrumentality of motivation. Lambert (1969) also recognized the limitation of motivation questionnaires. Regardless of these limitations, motivation should be directly or indirectly assessed through questionnaires, and language learners are affected by their attitudes and feelings in learning L2.

As cited in Purpora (2004), the Language Learning Questionnaires (LLQs) project was initially launched by Bachman, Cushing and Purpora (1993) in association with EFL division of UCLES. The major goal of constructing such questionnaires was to determine the effects of construct irrelevant factors in language test performance. These questionnaires were intended to provide information on both socio-psychological and strategic factors of the test takers. The socio-psychological battery of questionnaires was designed to measure motivation, attitudes, efforts and anxiety. More information on motivation questionnaire will be presented in the method section of this article.

The inclusion of motivation into the present study seems significant due to a number of reasons. First, in the field of second language acquisition, motivation has enjoyed particular popularity perhaps due to its modifiable nature. To be precise, motivation has recently received a new conceptualization, i.e., goal orientation, which refers to the learner's reasons for getting involved in learning tasks in ESP context. Second, as motivation is regarded as an ability-irrelevant factor, its effect on the performance of the subjects on ESP reading tests is worth being ascertained. Third like aptitude, intelligence and motivation play a crucial role in second language learning (Vollmer & Sang, 1983). Last but not the least, in order to perform adequately in ESP reading tests, testees have to use their personal, cognitive assets Carrell (1998).

#### **4. Purpose and the Research Question**

Taking the role of socio-psychological factors in language learning and assessment into account, researchers must continue to investigate the nature of these variables and examine their possible impact on learning outcomes. Of these personal attributes, motivation plays a crucial role in both language acquisition and test performance. Therefore, the present research attempted to investigate the possible relationship between motivation and test

performance. More specially, the following research questions was addressed in this study:

Is motivation related to testees' performance on ESP reading comprehension tests?

## **5. Research Methodology**

### **5.1 Participants**

The population from which the participants were selected comprised of university students majoring in different disciplines such as literature, economics, medicine, chemical and electronic engineering. Two classes were randomly selected from each field of study to represent the population under study resulting in a total of 245 participants. The participants were selected from junior and senior students in order to make sure that they had all passed their specific courses in English.

### **5.2 Instrumentation**

Five types of tests related to different fields of study, along with a questionnaire on motivation were used. They included:

1. Five teacher-made reading tests (TMRT) related to different subject areas (medicine, economics, English literature, chemical engineering, and electronics engineering) used to measure participants' reading ability in their specialized fields. These TMR tests are usually developed by the ESP instructors (both content and language teachers), who are busy teaching specific purpose courses. Such tests are often administered at the end of the course as a final examination, and used to measure students' language knowledge and subject area knowledge. In order to determine the suitability of such ESP reading tests for the present study, were piloted in the previous term before the study began. Except the medicine test, the estimated reliability coefficients for all the other tests (using KR 21) were found to be moderate (See Table 1).

**Table1:** Pretesting reliability coefficients

Tests	Mean	SD	Variance	KR21 R	No. of Items
Electronics	16.55	4.06	16.50	0.68	25
Chemistry	15.77	3.84	14.75	0.63	25
Literature	21.25	2.95	8.68	0.62	25
Economics	19.45	3.80	14.50	0.73	25
Medicine	17.15	4.69	22	0.79	25

In technical sense, if one takes the square root of the reliability indices in the Table above, it becomes apparent that the maximum observed validity possible for ESP reading tests used in this study will be obtained. So, considering the relationship between reliability and validity, such tests enjoyed empirical qualification for their use.

2. Motivation Questionnaire. In order to collect information concerning the participants' motivation, a translated version of the questionnaire on motivation developed based on Gardner (1979 & 1985a) and Purpora (2004) was used. The process of constructing and validating the questionnaire on motivation is presented as follows:

- Open-Ended Questionnaire: A 30-item open-ended questionnaire (OEQ) was initially developed. OEQ was first designed since the participants' real responses were regarded as beneficial to be used as the basis for developing the final version of closed type questionnaire. Of course, this procedure made the data more valid than those obtained solely through the closed type questionnaire. As noted above, the items for OEQ were partly selected from the widely used questionnaire such as Attitudes and Motivation

106 The role of motivation in ESP reading comprehension

Test Battery (AMTB) designed by Gardner (1985) and partly from Purpora (2004). Some examples of the integrative and instrumental motivation items both in Persian and in English will be as follows:

• Integrative Orientation:

1. Studying English can be important to me because it will allow me to be more at ease with people who speak English.

2. ترجیح می دهید که با انگلیسی زبانها کار کنید؟

• Instrumental Orientation:

3. Studying English can be important for me only because I will need it for my future career.

4. آیا مطالعه زبان انگلیسی به معلومات شما خواهد افزود؟ آیا به شما کمک خواهد کرد تا یک فرد تحصیل کرده شوید؟

The content of the OEQ items were scrutinized by expert judges (content and language teachers) so as to sieve the relevant items from irrelevant ones. The items in the OEQ were constructed in such a way that they could assess both integrative and instrumental motivation. Then, it was administered to a number of students from different fields. After collecting the data, they were organized and analyzed based on the participants' orientation to integrative or instrumental motivation. The classification and analysis of the OEQ were based on the information obtained from Gardner (1979 & 1985a) and Purpora (2004). According to the obtained responses from the first pre-test, the orientation of most participants was recognized to be toward instrumental rather than integrative motivation.

- **Closed Questionnaire:** Since the orientation of most participants was recognized to be toward instrumental motivation from their responses to the OEQ, a closed questionnaire was designed to measure such a trait. Based on the organization of the responses obtained from the open-ended questionnaire, the first draft of the closed questionnaire (CQ) on motivation was developed as consisting of a forty-item type. Furthermore, to assure content validity of the CQ, each item was carefully scrutinized by five competent ESP teachers. After receiving the teachers' comments and views, the items in CQ were reduced from 40 to 30. So, the first draft of the CQ was ready to be trialed.
- **Piloting and Revising:** In this stage, the CQ was piloted before being used in the real project so as to remove any potential flaws. In the piloting stage, the CQ was administered to 70 students from relevant fields of study. In order to quantify and interpret the data from the questionnaire, the Likert scale with five alternatives such as the following was used:  
1 Strongly Disagree; 2 Moderately Disagree; 3 Neutral; 4 Moderately Agree; 5 Strongly Agree

After the data being analyzed, the reliability estimate of the CQ using the Cronbach alpha reliability was .79 (Table 2).

**Table2:** The Cronbach alpha reliability

Variable	No. of items	Mean	Variance	SD	R
Motivation	30*	12.58	18.31	4.28	.79

After pre-testing, the CQ was ready to be used for the main project.

### **Procedures**

In two consecutive weeks, the participants took their own specific field reading comprehension tests, and they also filled out the questionnaire regarding motivation immediately after the test administration.

### **Results and Discussion**

As to the purpose of the study which was to probe the impact of motivation on ESP reading test performance, a null hypothesis was formulated as follows:

- Motivation as a socio-psychological factor does not affect the students' performances on ESP reading comprehension tests.

In order to investigate the above null hypothesis, both descriptive and inferential statistics were utilized the results of which will be fully delineated and explained in the following sections.

### **Findings**

To perform the relevant statistical analyses, first, descriptive statistics was applied in order to examine the distribution and normality of test scores obtained on both motivation questionnaire and five ESP tests. Second, one-way ANOVA was run to see the effect of motivation on test performance of the participants. The descriptive statistics of motivation questionnaire together with its reliability coefficients obtained in the main study is shown in Table 3 below. As displayed in Table 3, literature students have a higher motivation than other participants, and economics and medicine groups ranked second in terms of being motivated in test performance. (Table 4 also illustrates descriptive statistics regarding the ESP majors such as economics, literature, medicine and electronic and chemical engineering tests.)

**Table 3:** Descriptive Statistics for Motivation

Fields of study	Mean	STD	Maximum scores	No. of subjects	KR 21 = .82
<b>Electronics</b>	21.73	3.38	<b>28</b>	<b>46</b>	<b>.82</b>
<b>Chemistry</b>	20.98	3.06	<b>26</b>	<b>47</b>	
Literature	23.14	<b>2.81</b>	<b>27</b>	<b>53</b>	
<b>Economics</b>	22.58	<b>2.14</b>	<b>25</b>	<b>39</b>	
<b>Medicine</b>	22.01	<b>2.89</b>	<b>30</b>	<b>60</b>	

**Table 4:** Descriptive Statistics: ESP Reading Tests

Groups	Tests	Mean	SD	Variance	No of subjects
Electronics	Electronics	22.42	3.21	9.61	46
Chemistry	Chemistry	17.92	<b>4.17</b>	<b>17.38</b>	47
Literature	Literature	<b>21.80</b>	<b>2.85</b>	<b>8.12</b>	53
Economics	Economics	<b>20.98</b>	<b>2.60</b>	<b>6.76</b>	39
Medicine	Medicine	<b>20.02</b>	<b>3.62</b>	<b>13.10</b>	<b>60</b>

In order to provide a plausible answer for the research hypothesis mentioned above concerning the impact of motivation on test performance, one-way ANOVA was applied. To do so, the level of significance for rejecting the null hypothesis was set at .05.

As the results shown in Table 5, the F-value, i.e., 3.88, (or the effect of motivation) is greater than the F-critical 2.42 at .05 level of significance, indicating that there is a significant difference between the mean score of the five groups on the motivation questionnaire. Thus, the findings indicate that since the critical value of F is lower than F observed, the difference between the mean scores of high- and low-motivation groups is significant.

Therefore, the F-observed value for the effect of motivation was significant, and so were the two-way interactions between

## 110 The role of motivation in ESP reading comprehension

group by motivation. Since the F for the interaction between the variables was significant, the post-hoc Scheffe test had to be run to compare the individual mean score. The results of the post-hoc Scheffe's Tests indicated that there was only one significant difference among the means, that is to say, the English literature group with the mean of 23.14 was more motivated than the chemical engineering group, whose mean was equal to 20.98.

**Table5:** A one-way ANOVA for the relationship between Motivation and test performance

Source of Variation	Sum of Squares	df	Mean Squares	F-obs	Sig.
Between Groups	131.54	4	32.88	3.88	.001
Within Groups	2030.63	240	8.46		
Total	2162.18	244			

$$p = < .05$$

## 6. Discussion and conclusions

Based on the one-way analysis of variance, which aimed at investigating the impact of motivation on the test performance of the subjects, the null hypothesis was rejected. That is, motivation had a significant impact on the test performance of the subjects on teacher-made EST reading tests such as literature, economics, and medicine. But the performances of electronics and chemical engineering students were not that much affected by the motivation variable.

What is likely drawn from the findings of this study can be explained in the sense that, first, motivation seemed to have certainly formed a fairly different psychological trait from specific purpose language tests. Second, the finding of the study can further be understood in the sense that motivation like other socio-

psychological factors, which may be claimed to have a positive role in second language learning or acquisition, also has a significant effect on test performance. This finding would probably support those researchers who have claimed that socio-psychological factors have a direct bearing on the test-takers' performances on language tests and their devotion of time for learning (e.g., Gardner 1985 & 1988; Bachman, Cushing and Purpora, 1993); Kunnan 1995; Dornyei & Schmidt 2001; Purpora (2004). As the result of the post-hoc Scheffe test shown in Table 5, it became obvious that English literature students were more motivated in test performance than the other groups. In line with the first finding, the second one would possibly provide support for the fact that English literature students in an academic context are more motivated in test performance than the other groups. This is because these students selected to pursue English literature course at the university, so they are more likely to have higher motivation than the students of other course of study.

Therefore, certain theoretical and pedagogical implications can be derived from the present study in the context of English language teaching at university level. First, just as socio-psychological factors are likely considered as the key element in second language learning or acquisition, they can also affect test performance. Second, to motivate students for performing on ESP tests, tests should have a direct bearing on the students' orientation for which they study as shown in the case of English literature participants. Finally, positive attitudes must exist within any exam-oriented school curriculum in order to maintain student's motivation and interest in learning ESL in Iranian schools.

As for the limitations of the study, the following arguments can be in order. First, because the data collection procedure is solely via a questionnaire, the findings of this study can not be highly dependable and generalized to other situations. Perhaps this is because of the nature of questionnaire, which is notoriously

112 The role of motivation in ESP reading comprehension

invalid. Second, the effect of motivation on language test performance was tested against ESP test not general proficiency tests. To this end, the results of this study might turn up differently, if more participants as to (males and females) and more ESP majors were used.

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114 The role of motivation in ESP reading comprehension

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