



Relationship between English Language, Learning Strategies, Attitudes, Motivation, and Students' Academic Achievement

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ARTICLE INFO

Received : 24/10/2012
Accepted : 30/01/2013
Published : 01/09/2013

KEYWORD

Learning strategies
Motivation
Attitude
English language
Academic achievement

ABSTRACT

Background: A considerable amount of research has been done to explore the key factors that affect learning a second language. Among these factors are students' learning strategies, motivation, attitude, learning environment, and the age at which they are exposed to a second language. Such issues have not been explored extensively in Saudi Arabia, even though English is used as the medium of teaching and learning for medical studies. **Objectives:** First, to explore the learning strategies used to study English as a second language. Second, to identify students' motivations for studying English. Third, to assess students' perceptions toward their learning environment. Fourth, to investigate students' attitude towards the speakers of English. Fifth, to explore any possible relationships among English language proficiency grades of students and the following: demographic variables, grades for their general medical courses, learning strategies, motivational variables, attitudes, and environmental variables. It is also the aim of this study to explore the relationships between English language learning strategies and motivational variables. **Methods:** A cross-sectional descriptive study was conducted in May, 2008. The Attitudinal Measure of Learners of English as a Second Language (AMLESL) questionnaire was used to explore the learning strategies used by students to study English as a second language, their motivation to study English, their attitude toward English speaking people, and perceptions toward the environment where the learning is taking place. **Results:** A total of 110 out of 120 questionnaires were completed by Applied Medical Science undergraduates, yielding a response rate of 92%. Students utilize all types of learning strategies. Students were motivated 'integratively' and 'instrumentally'. There were significant correlations between the achievement in English and performance in general medical courses, learning strategies, motivation, age, and the formal level at which the student started to learn English. **Conclusion:** The study showed that students utilize all types of language learning strategies. However, cognitive strategies were the most frequently utilized. Students considered their learning environment as more positive than negative. Students were happy with their teacher, and with their English courses. Students held a positive attitude toward English speaking people. Achievement in English was associated positively with performance in the general medical courses, motivation, and social learning strategies.

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Introduction

Since the early 1970s, a considerable amount of research has been done to explore the key factors that enhance or hinder learning a second language. Among these factors are learning strategies used to study a second language, students' motivation to study a second language, their attitudes toward learning the language, the perception of their language learning environment, and the age at which they are first exposed to the study of a second language. O'Malley and Chamot [1] identified the strategies that successful language learners employed to facilitate their learning of the second language by classifying them into three main types: metacognitive, cognitive, and social strategies. Previous studies hypothesized that if language learners are taught how to use these different language strategies, they probably would become more effective and independent learners [2].

Gardner [3] categorized levels of motivation for studying the language into 'integrative' and 'instrumental' orientations. 'Integrative' orientation emphasizes that learners' motivation to study the second language stems from a positive disposition to members of the target language and a desire to interact with them. On the other hand, 'instrumental' orientation emphasizes that motivation stems from a belief that learning a second language can be helpful in getting a job or in furthering one's education [4, 5]. Gardner and his colleagues hypothesized that 'integrative' motivation might have more influence on the long-term motivation necessary for most of the tasks in second language learning [4-6].

Educational research has shown that students' attitude toward a second language course [7], their language teacher [3], or about a particular foreign nation in which the second language is addressed [3] has an effect on their acquisition/achievement in that language. Gardner [3] argued that if learners' perception of speakers of the language being studied is positive, their motivation will be high, which will in turn influence their learning of that

language. In support of Gardner's [3] claim, Ho [8] examined the association between the students' willingness to engage in culture studies and their motivation and attitude towards learning English. He found strong associations between willingness, motivation, and attitude. Students who enjoyed studying about English-speaking countries tended to have a more positive attitude, and a higher motivation to study the English language. In contradiction to Gardner's argument, Svansen [9] found a negative relationship between English proficiency and attitude towards the people of target language. He concluded that the more learners know a language, the more they are able to criticize its culture.

It has been highlighted in the literature that the learner's age has an effect on second language acquisition. According to Krashen [10, p. 43] "Acquirers who begin natural exposure to second languages during childhood generally achieve higher second language proficiency than those beginning as adults". In support of this claim, Newport [11] explored the influence of age on acquisition. He found a relationship between the age of acquisition and language performance. On the other hand, Slavoff and Johnson [12] explored the influence of age on the pace of acquisition of English as a second language of immigrant children, aged 7-9 and 10-12 in the USA. They found no significant differences between the performance of the two groups. Their results did not support Krashen's [10] claims. In the context of medical education, the literature claims that mastering the complex professional and technical language of medical education is the biggest challenge for medical students [13]. This challenge becomes even bigger if medical students come from a country that has little contact with the English language [13]. English is the medium of teaching and learning instruction in many medical schools around the world. Medical students' lack of English language skills might be considered a major obstacle to their academic success [14]. Studies on the above issue have verified the positive and significant association between students' medical performance and their English language proficiency [13, 15-17].

In Saudi Arabia, English is used as a medium of instruction in medical schools. However, to the best of the author's knowledge, no formal studies have been conducted to explore the above issues at the College of Applied Medical Sciences at the University of Dammam in Saudi Arabia.

The objectives of this study are five -fold. First, to explore the learning strategies used by students to study English as a second language. The second is to identify students' motivations for studying English Third, to assess students' perceptions toward the environment where the learning of English is taking place. The fourth is to investigate students' attitude towards the speakers of English. Fifth, to explore any possible relationships among learning strategies, attitudes, motivation, perception of the English learning environment, English language proficiency grades of students, and their grades for their general medical courses.

Material and Methods

Study setting

The study was conducted in the College of Applied Medical Sciences (CAMS) - Female section, University of Dammam, Saudi Arabia. The CAMS – Female section consists of the following seven departments: Department of Medical Laboratory Technology, Respiratory Care, Health Information Management and Technology, Physical Therapy, Radiology, Cardiac Technology, and Clinical Nutrition. The academic programs for all mentioned departments cover four years plus one internship year in Saudi Arabia. During the first year, all students study similar compulsory courses, namely: General and Scientific English (6-credit hours), English Study Skills (2- credit hours), two Biological courses (one course has 2 and the other one 4 –credit hours), Chemistry (4-credit hours), and Physics (4-credit hours). In addition, three general courses are offered, namely: Learning Skills, Islamic Culture, and Islamic Ethics (2-credit hours each). English language is the medium of teaching and learning in this college.

Study design

A cross-sectional descriptive study in May, 2008.

Target population and sample size

The target population was all first year students (n=120) at the college of Applied Medical Sciences - Female section.

Data was collected through a self-administered anonymous questionnaire. The researcher of this study presented the goals of the study to the students at the end of one of their lectures. Verbal consent was obtained prior to the distribution of the questionnaires, stressing the students' right to non- participation. Approximately 20 minutes was required to complete the questionnaires.

Instruments

The Attitudinal Measure of Learners of English as a Second Language (AMLESL) questionnaire which was developed by Al-Qahtani [18] was employed to explore learning strategies students use to study English as a second language, motivation to study English, attitude toward the English speaking peoples, and perceptions toward the environment where the learning is taking place, in terms of perceptions towards teachers and English language courses. The questionnaire consisted of two parts. The first part covering the strategies used to study English as a second language, consisted of 23 statements based on the definition of O'Malley and Chamot [1] language learning strategies, and classified into three groups:

(1) Metacognitive strategies, which focus on planning for learning, monitoring of comprehension or production, and self-evaluation of learning. Examples of such strategies are: advance organization, direct attention, selective attention, self- management, self- monitoring, and self -evaluation.

(2) Cognitive strategies, which are more directly related to students' learning tasks and involve

direct manipulation or transformation of information. They focus on comprehension, acquisition, and retention. Examples of such strategies are: resourcing, translation, note-taking, elaboration, and inferring.

(3) Social strategies, which focus on interaction with another learner. Examples of such strategies are: questions for clarification and co-operation.

The second part contained 28 statements in five groups: motivation toward studying English as a second language, 'instrumental' orientation, 'integrative' orientation, perception toward the learning environment where English Language learning is taking place, and attitude toward English speaking people (integrativeness). Each statement was followed by a five- option level of agreement Likert scale ranging from strongly agree (coded as 4), agree (coded as 3), uncertain (coded as 2), disagree (coded as 1), and strongly disagree (coded as 0). The scoring was reversed for negative statements. In addition, there were five demographic variables: age, age at which student was first exposed to the English language, school level at which the student started studying English formally, overall grade average in the student's English courses (English language proficiency grade), and overall grade average in the student's general courses (general medical courses grade).

Statistical Analysis

A non-parametric statistical technique was performed using the Statistical Package for Social Sciences (SPSS, IBM, Chicago, Illinois, USA) version 16. Cronbach alpha coefficient was used to assess the internal consistency of the questionnaire. Spearman's rho coefficient was calculated to assess the relationship between: a) English language proficiency grade and demographic variables, b) English language proficiency grade and grades of the general medical courses c) English language proficiency grade and English learning strategies, d) English language proficiency grade and motivational, attitudinal and environmental variables, and e) English language learning strategies and motivational variables.

Results

A total of 110 out of 120 questionnaires were completed, yielding a response rate of 92%. All respondents were female students. Their mean age was 18.64 ± 0.6 years. Sixty percent of the students were exposed to the English language after the age of ten. Almost 70% of them had started their formal learning of English as a second language at the intermediate level. More than half (56%) of the students achieved grade 'A' while 34% of them obtained grade 'B' in their English language courses. About 40% of the students had a grade 'A' in their general medical courses, while 44% of them achieved level 'B' in their general medical courses.

Reliability analysis

The Cronbach's alpha reliability coefficients of scales of AMLESL survey were as follows: metacognitive strategies ($\alpha = .775$), cognitive strategies ($\alpha = .648$), social strategies ($\alpha = .719$), motivation to study ($\alpha = .444$), perceptions of the learning environment where English learning is taking place ($\alpha = .708$), 'instrumental' orientation ($\alpha = .339$), 'integrative' orientation ($\alpha = .549$), and the overall questionnaire ($\alpha = .834$). The Cronbach alpha reliability coefficients of overall scales, metacognitive strategies, social strategies, and perceptions of the learning environment were *high to very high*. Those of cognitive strategies, 'integrative' orientation, attitude toward English speaking people ('integrativeness'), and the motivation to study English as a second language were *average to high*. For 'instrumental' orientation, the Cronbach's alpha reliability coefficient was present but low.

Students' English language learning strategies

Table 1 revealed that students reported direct attention, self-monitoring, translation, elaboration, and inferring as the most frequent strategies used (median scores were ≥ 3.5 ; IQR ranged between 2-4 and 3-4). While advance organization, selective attention, and resourcing were the strategies used less frequently (median

scores ranged from 1 to 2 and IQR were .92-2.3, 0-3, and 1-3 respectively).

The table also revealed that students utilize meta-cognitive, cognitive, and social strategies (median scores were >2.5 ; IQR ranged between 2.1-2.9 and 2-4), (except advance organization, selective attention, and resourcing). However, the extent of utilization differed. Cognitive strategies were utilized more frequently than meta-cognitive and social strategies.

Students' motivation to study English

Table 1 revealed that students were more positive than negative in their motivation to study English as a second language (median = 2.625 and IQR was 2.25-3.00). Furthermore, 'integrative' and 'instrumental' motivation were scored similarly (median scores = 3.75 and IQR were 3-4 and 3.25-4 respectively).

Students' perception of their learning environment

Table 1 revealed that students were largely positive in their perception of their learning environment (median=3.428; IQR was 2.71-3.71). It also showed that students were quite satisfied with their teacher and English courses (median scores were >3.2 ; IQR were 2.50-3.75 and 2.66-3.66 respectively).

Students' attitude towards speakers of English

Table 1 showed that students' attitude toward people who spoke English was slightly more positive than negative (median = 2.8; IQR was 2.20-3.20).

Relationship between the Grade in English Language Proficiency and demographic variables

Table 2 revealed negative significant correlations between English language performance and "age at which the students were first exposed to the study of English language" ($r = -0.373$, $p < 0.001$) and the "formal level of study when

students began to learn the English language" ($r = -0.368$, $p < 0.001$).

Relationship between the Grade in English Language Proficiency and Grades in General Medical Courses

Table 2 indicates a positive significant association between the performance in English language and that in the general medical courses ($r = 0.552$, $p < 0.001$).

Association between the Grade in English Language Proficiency and English Learning strategies

Table 2 indicates only one out of possible three significant correlations between the grade in English language proficiency and strategies for learning English as a second language. This significant correlation was evident between the grade in English language proficiency and social strategies for learning English as a second language ($r = 0.201$, $p = 0.036$).

Relationship between the Grade in English Language Proficiency and Motivational, Attitudinal and Environmental Variables

Table 2 shows significant positive associations between the grade in English language proficiency and the motivation to study English ($r = 0.237$, $p = 0.013$). Furthermore, table 2 shows a significant positive association between the grade in English language proficiency and 'integrative' motivation ($r = 0.218$, $p = 0.022$). There were no significant correlations between the grade in English language proficiency and both the perception of the environment where the learning of English as a second language takes place, and attitude toward speakers of English ('integrativeness').

Association between English Language Learning Strategies and Motivational Variables

Table 3 revealed that all three types of English learning strategies were significantly and positively associated with 'integrative' motivation while 'instrumental' motivation was significantly

and positively associated with cognitive and social strategies only.

Discussion

The literature emphasizes the importance of exploring the key factors that have an impact on students' performance in English. This study aimed at exploring the learning strategies used to study English as a second language, motivational and attitudinal patterns, and the environmental factors with possible associations with the grade or achievement in English language proficiency. The findings revealed that the Attitudinal Measure of Learners of English as A Second Language (AMLESL) questionnaire was a reliable instrument for investigating the learning strategies used by students to study English as a second language, the motivational and attitudinal patterns and the English language learning environment.

In general, the findings revealed that students utilize meta-cognitive, cognitive, and social language learning strategies, though the degree of utilization varies. The extensive use of direct attention, self-monitoring, translation, elaboration, and inference strategies might be partly explained by the fact that first year students exposed extensively to a new medium of language instruction/ teaching and learning, have a heavy workload of new material to study and complex medical terminology to be translated, analyzed and understood. These strategies involve the active manipulation of the learning materials [19]. The result on the self-monitoring strategy is in harmony with Skehan's view [20] which indicates that a self-monitoring strategy is utilized more by those who have greater exposure to the new language. First year students in this study were exposed intensively to the English language, for they were enrolled in a total of seven out of eight subjects that use English language as a medium of instruction, teaching and learning.

Analysis of cognitive strategies revealed that to manipulate the information, students tended to use inference a great deal, followed by elaboration and translation. This finding might

reflect the load in the medical curriculum, which requires the processing of an extensive amount of information for learning, information which needs to be analyzed, deductions made, elaborated on, and integrated with other new knowledge.

Regarding students' motivation, the results revealed that students' motivation to study English as a second language was positive. The results also revealed that students use both integrative and instrumental motivation. One possible explanation for this result is that students were concerned about the importance of the role of English language in their academic success. Its place as a college prerequisite spurred them on to learn and master the language not only for a short term goal to accomplish their undergraduate studies, but also as a means of pursuing their life –long learning.

Analysis of environmental variables suggest that the English learning environment was perceived as satisfactory by first year students at CAMS College in the University of Dammam. Students felt much happier with their teacher and with their English courses. This may indicate their satisfaction with their English teachers for their support and encouragement to practice the English language, while fully aware of the varying levels of students' comprehension, and providing them with constructive feedback. It might also be that students consider the English course as a useful, valuable, and interesting subject to be studied.

With regard to students' attitude toward speakers of English, the results revealed that students' attitudes were slightly more positive than negative. This result could be traced back to the positive image and admiration the society has for English speakers based on the belief that people who speak English are well educated, and competent.

The negative and significant correlations found between the grade in English language proficiency and the 'age at which students were first exposed to the study of the English language' and the 'formal level of study when

students started learning English language', underline the importance of introducing the learning of English language at an early stage of formal education, perhaps in the first year of the elementary school along with instruction on the mother-tongue. It seems that students who were exposed to English at an early age or who started to learn English at an early formal level of study tended to have a higher level of proficiency in English.

The positive significant correlation between the grade in English language proficiency and grades in the general medical courses indicates the important influence of English on students' performance. The results suggest that students who are good in English were more likely to achieve better results in their courses. This result is in accord with studies of Alfayez et al., [21], Hayes and Farnill [22], and Hassan et al., [16]. It is also in agreement with the study by Alnasir and Jaradat [17] which found a significant linear relationship between students' achievement in the university admission test, which includes a test of the students' English language skills, and the students' performance in the various disciplines in the first year of their medical study at the Arabian Gulf University. It is also in line with the finding of the Al-Rukban et al., [23] study which indicated that admission tools such as the achievement test which includes a test of English language skills, correlated significantly with students' medical performance in the undergraduate medical program.

The significant association found between the grade in English language proficiency and social learning strategies for English as a second language supports the claim by O'Malley and Chamot [1] that there was a relationship between students' effectiveness and the use of different classes of learning strategies. The result in this study revealed that a relatively higher degree of social strategy is associated with a higher level of English achievement. This finding contradicts Khalil's [2] results that showed that the higher the English proficiency, the greater the variety of the strategies used. The absence of any significant association between English achievement and the metacognitive and cognitive

strategies might indicate that English achievement was not greatly influenced by these two types of learning strategies. This might imply that some factors other than these types of language learning strategies were at play in students' English achievement.

The significant and positive association found between the grade in English language proficiency and the motivation to study English, indicate that students with higher levels of motivation tend to do better on the English test than students with lower score on motivation subscale. This finding supports both Gardner's claim [3] and Bernaus and Gardner's results [24] that motivation for language learning has an effect on the proficiency in learning that language. However, this result contradicts the findings of both Lim's [25] and Wei's [26] studies that showed no correlation between English language proficiency grade and motivation. The significant and positive association found between the grade in English language proficiency and 'integrative' motivation supports the finding of Ghanea et al., [27]. It is also in accord with Man-Fat's [28] study that showed a significant association between 'integrative' motivation and language proficiency among English language learners in Hong Kong. However, the absence of any significant relationship in this study, between language proficiency and 'instrumental' motivation contradicts the finding of Ghanea et al., [27].

The significant and positive association found between the English language learning strategies and motivational variables indicate that students with higher levels of motivation tend to use all types (i.e. meta-cognitive, cognitive, and social) of English learning strategies more frequently than students with lower score on motivation subscale. A comparison between 'integrative' and 'instrumental' motivation in relation to their association with English learning strategies revealed that 'integrative' motivation had higher levels of associations with English learning strategies than 'instrumental' motivation.

Conclusion

This study aimed at exploring the learning strategies used in studying English as a second language, the motivational and attitudinal patterns and the students' perception toward their learning environment where English learning takes place. It also aimed at exploring possible associations between English language proficiency grade/achievement and demographic variables, learning strategies, motivational, attitudinal, and environmental variables.

Overall, the results indicated that students utilize the metacognitive, cognitive, and social language learning strategies, though the degree of utilization varies. Cognitive strategies are more widely used than other types.

The analysis also suggests that students have a positive motivation to study English as a second language. They use both 'integrative' and 'instrumental' motivation. In addition, students perceived their learning environment as more positive than negative. Students were pleased with their teacher and with their English courses. They also had a positive attitude toward English speaking people.

Achievement in English was associated positively and significantly with social learning strategies, motivation to study English, 'integrative' motivation, and performance in the general medical courses. On the other hand, the results showed that achievement in English was associated negatively and significantly both with the age at which the student was first exposed to the language and the level at which student started to learn English formally.

Recommendations

The following recommendations, based on the above conclusions, are made for several groups within the higher education industry.

Decision makers at the Ministry of Education should introduce the learning of English in the very early years of elementary school.

Faculty/teachers of English language should place more emphasis on engaging students in the task of language learning, provide more opportunities for practical sessions during which students communicate in English, and create a virtual/spiritual/imaginary environment in which students can engage in all aspects of the English language.

Those in authority in the English Language Department should encourage students to utilize social strategies more, since it correlated more highly with the proficiency grade/achievement than the other types.

Students should attend workshops on how to adopt a diversity of language learning strategies. Such workshops might place emphasis on training students to use a combination of meta-cognitive, cognitive, and social learning strategies.

It is anticipated that the use of the information acquired in this study will improve the English language learning environment in the College of Applied Medical Sciences, and provide a constructive influence on students' learning in Saudi Arabia.

Limitations

This study used a questionnaire as the main tool for data collection. For future studies, it is recommended that qualitative research methods such as interviews be used, to find out the language learning strategies used by students in their study of English. In addition, this study was limited to only one college in Saudi Arabia, which makes any generalization inappropriate.

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Table 1: Median and inter-quartile range (IQR) for strategies for learning English, motivation to study, integrative orientation, instrumental orientation, perceptions toward learning environment, and attitude towards the speakers of English.

Strategies for learning English	Median (IQR)
Meta-cognitive Strategies	2.541 (2.062 - 2.916)
Advance organizer	1.333 (.916 - 2.333)
Direct attention	3.500 (2.000 - 4.000)
Selective attention	1.000 (0.000 - 3.000)
Self-management	2.875 (2.250 - 3.250)
Self-monitor	3.500 (3.000 - 4.000)
Self-evaluation	3.000 (3.000 - 4.000)
Cognitive Strategies	3.125 (2.625 - 3.500)
Resourcing	2.000 (1.000 - 3.000)
Translation	3.500 (2.000 - 4.000)
Note-taking	3.333 (2.666 - 4.000)
Elaboration	3.500 (3.000 - 4.000)
Inferring	4.000 (3.000 - 4.000)
Social strategies	2.625 (1.750 - 3.312)
Question for clarification	3.000 (2.000 - 3.500)
Cooperation	2.500 (1.500 - 3.500)
Motivation to Study	2.625 (2.250 - 3.000)
Instrumental Orientation	3.750 (3.250 - 4.000)
Integrative Orientation	3.750 (3.000 - 4.000)
Perception toward Learning Environment	3.428 (2.714 - 3.714)
Perception toward courses	3.333 (2.666 - 3.666)
Perception toward teachers	3.250 (2.500 - 3.750)
Integrativeness (attitude towards the speakers of English)	2.800 (2.200 - 3.200)

Table 2: Correlation Between English language grade, general medical courses grade, age, formal level of study, learning strategies, motivational, attitudinal and environmental variables.

	English language Grade r (p-value)
General medical courses grade	0.552 (<0.001) **
Age when first exposed to studying English language	-0.373 (<0.001) **
Formal level of study when started learning English language	-0.368 (<0.001) **
Meta-cognitive strategies	0.115 (0.232)
Cognitive strategies	0.128 (0.184)
Social strategies	0.201 (0.036) *
Motivation to study English language	0.237 (0.013) *
Instrumental orientation	0.099 (0.302)
Integrative orientation	0.218 (0.022) *
Integrativeness	0.093 (0.336)
Perceptions of English learning environment	0.059 (0.538)
Perception of English language course	0.073 (0.450)
Perception of teachers of English language courses	0.079 (0.412)

r = coefficient correlation

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Table 3: Associations between strategies for learning English language and motivational variables

	Motivation to study English language r (p)	Instrumental orientation r (p)	Integrative orientation r (p)
Metacognitive strategies	0.503** (< 0.001)	0.187 (0.050)	.315** (0.001)
Cognitive strategies	0.527** (< 0.001)	0.254** (0.008)	.367** (< 0.001)
Social strategies	0.516** (< 0.001)	0.287** (0.002)	.390** (< 0.001)

r = coefficient correlation

P = correlation probability

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).