The Study of the Relationship between Learning Styles and Thinking Styles with Academic Self-efficacy in English lesson among the Students of Islamic Azad University of Behbahan

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ABSTRACT

The purpose of the present study was to investigate the relationship between learning styles and thinking styles with academic self-efficacy of English lesson among students of Islamic Azad university of Behbahan. The present study was applied in terms of purpose, and regarding the method of concluding research it was co relational.The statistical population pool of the research includes all of the students of Islamic Azad university of Behbahan,who in the first semester of 2012-2013 academic year have selected their subject units, and this number amount to 7941 students. According to stratified sampling and Morgan table, a sample of 367 students was selected, which ultimately 367 questionnaires were collected.Data collection tools include Kolb learning style questionnaire, Sternberg thinking styles questionnaire, and researcher-made questionnaire of English lesson academic self-efficacy of students. Research data was analyzed by descriptive statistic methods (mean, frequency and standard deviation) and inferential statistics (Pearson correlation coefficient, regression coefficient, and chi square test). Data analysis results showed that the judgmental thinking style and legislative thinking style had a significantly positive relationship with academic English lesson self-efficacy of students. But there was a significantly negative relationship between the executive thinking style and the academic self-efficacy of students, also there was a significantly positive relationship between all of leaning styles elements with academic English lesson self-efficacy of students. Regarding academic self –efficacy there was a significant difference between students of humanities and engineering students, but academic self –efficacy rate was identical between male and female students.
Key words: Learning Styles, Thinking Styles, English Lesson, Academic Self-Efficacy, Students

INTRODUCTION

On of fundamental issues in recent years has been how styles are proportional to and coordinated with today`s increasingly variable and complicated situations and future challenging situations [1]. Self –efficacy which is one of the main elements of motivational models, Includes the judgmental style of learners about their capacity and abilities for acting in special domains of knowledge.

Self-efficacy is a kind of self-evaluation that influences individual decisions regarding what should be done in a certain area for learning.

Also self-efficacy is a kind of individual judgment that indicates the amount of people's effort and perseverance for achieving success in a special academic area such as mathematics, science etc. These personal expectations are indicative of the person's perseverance, patience, persistence and toleration. For achieving adroitness in a certain area of academic assignments. In addition, self-efficacy is a basic motivating element which determines what learners would do with mental capacities and knowledge and skills they have acquired experimentally. That is why learners with strong self-efficacy are more likely to succeed in their academic assignments compared with other learners [2]. Learning styles are beliefs, preferences and behaviors that people utilize in order to learn in certain conditions. According to Kolb theory, learning is a four-step process that involves concrete experience, reflective observation, abstract conceptualization and active experimentation.

This situation represents 2 dimensions which Includes:
1. Concrete experience versus abstract thinking
2. Reflective observation versus active experimentation.

These dimensions form four styles of divergent, convergent, assimilate and accommodate learning. Also thinking styles are seriously considered by some researchers and experts as one of effective behavioral variables. Various studies have shown that thinking styles are related to creativity, problem solving, decision making, academic success, and factors such as culture, gender, age, field of study, occupational back ground. Parents, styles also affect individual thinking styles to large extent [3]. According to Sternberg's self-government theory [4], people have preferences in facing their surroundings and in thinking about them which are called thinking styles. Indeed, thinking styles are neither bad nor good by themselves, but refer to the thinking styles that people are comfortable with [5]. Also recognizing the concept of people's thinking styles and understanding the relationship of those styles with abilities are especially important.

For example, a person with legislative thinking style would show a great self-efficacy in invention, creativity and innovation, or a responsible employee with dominant executive thinking style when obeying orders of his authorities could be a self-efficient person in his organization. Also people with judgmental thinking styles, if be in suitable cultural and environmental situations, could certainly be successful and self-efficient people as to evaluation and judgment. Considering the above mentioned variables, numerous studies have been conducted. Kadivar et al. [2] found that there was a significantly positive relationship between learning styles and mathematic success. Homayuni et al. [6] came to conclusion that subjects with assimilate and convergent learning styles would select mathematics and empirical science more than those subjects who utilize accommodate and divergent learning styles.

But students with accommodate and divergent learning styles usually choose humanities more than those utilizing convergent and accommodate thinking styles. Panahye et al. [7] pointed out that participants with divergent and assimilate learning styles would show a better scholastic performance compared with those participants with convergent and accommodate learning styles. Also Karimi [8] showed that students with divergent learning style had the best performance, and convergent students had the weakest performance in architecture planning workshop.

Addullahzade's findings [9] showed that there was a significant relationship between legislative, executive and judgmental thinking styles and rate of learning the basics of information and communication technology, and these three variables had the ability to anticipate the criterion variable, and also the relationship between thinking styles with the rate of learning the basics of information and communication. Technology is not significant in terms of gender. Nateghian's findings [10] showed that various thinking styles such as legislative, judgmental, hierarchical, holistic and liberal thinking could anticipate more creativity grades. Rezaie [11] concluded that the legislative thinking style a significantly negative relationship with the academic performance. Abolghasemi Najafabadi et al. [5]. Also pointed out that there was a significantly positive relationship between the academic success and the procedures of different thinking styles. Moradi [12] also concluded that there was a significantly positive relationship between thinking styles and the academic success. Kolb and wolf [13] found that the students of commerce fields of study utilized the accommodate learning style, and students of engineering fields of study utilized the convergent style, and the students of history, English language, political sciences, psychology, social sciences and economics utilized the assimilate style. Schunk [14] concluded that self–efficacy is different with regard to gender and age, and also he found that men was more self–efficacy than women. Pajares [15] also came to this conclusion that the amount of self-efficacy of boys was more than girls. Kelly [16] found that awareness of English teachers about students' learning styles could assist them to better present materials in the classroom so that it would result in increasing learning and cognitive functioning among students, and consequently would reduce the effect of individual differences in learning. Strenberg and Wagner [17] concluded that there was a positive relationship between legislative and judgmental thinking styles and test scores of ability in academic success. But there was a significantly negative relationship between the executive thinking style and academic success. Zhank [18] concluded that students, who had a positive self-evaluation from their abilities, also had a creative thinking style, and those students who underestimated their own abilities, had a lower executive thinking style and a lower cognitive development. Saroghad et al. [19] concluded that there was a significantly positive relationship between the self-efficacy variable and all thinking styles except for introvert and holistic thinking at a 0.01 level among all of students. Also there was a significant relationship between thinking styles and the self-efficacy of female students, but there was not any significant relationship between thinking styles and the self-efficacy of male students. Peermohamadi et al. [20] concluded that multiple aspects of thinking styles, including functions, levels, form, domains tendencies and deep or superficial learning procedures indicated different levels of variability of academic success scores among students.

The research results of Shokri et al [21] showed that there was a significantly positive relationship between academic success and some thinking styles such as judgmental, legislative, liberal, outward hierarchical and deep learning procedure. Also there was a significantly negative relationship between the academic success and some other thinking styles such as executive, conservative, trivial and superficial learning procedures.

Considering various researches available as to various thinking styles and learning styles so far there has not been any research to show any relationship between thinking and learning styles and self-efficacy in learners and most students in different levels of education have problems with learning English language, whereas self –

efficacy is different with regard to the area and domain of knowledge, and finally with regard to the importance of the essential role of leaning styles and thinking styles of students in the academic self-efficacy of English lesson, the present researchers obliged themselves to conduct this study at the Islamic Azad university of Behbahan. Due to the findings that will be achieved by conducting research on learning and thinking styles and academic self –efficacy, students, professors and university authorities could help students to reach self-efficacy.

Therefore in this research, the relationship between help learning styles and Strenberg thinking styles with academic self-efficacy in English lesson among the students of the Islamic Azad University of the Behbahan was investigated.

MATERIALS AND METHODS

The present study was applied in terms of purpose, and was also correlation in terms of the method of conducting research.In the present study, descriptive and inferential statistics were used to analyze the data. In descriptive statistics part, mean, frequency, standard deviation and frequency percentage were calculated and in inferential statistics part, that was the main part of study, Pearson correlation coefficient and regression coefficient test were used to examine the hypotheses. In this research the statistical population pool included all of the students of Islamic Azad university of Behbahan who were 7941 and in the first semester of 2012-2013, and had selected their own subject units. Using stratified sampling technique and Morgan table, a sample of 367 students were selected, and 367 questionnaires were collected accordingly. In this project the following tools were applied for collecting information:

1. Kolb learning styles questionnaire: This tool consists of 12 questions to which students give score according to their own learning priorities. In this questionnaire, each question has four options that the students assign one of the 1,2,3,4 scores according to the correspondence of each answer with their own learning. In the case of the highest correspondence, score 4 is assigned, and in the case of the lowest correspondence, score 1 is assigned. In this questionnaire, the answers of each question are arranged according to four learning styles, which none of them is preferable to the other ones, and they are equal. The purpose of this questionnaire was to describe how the students learn, not to evaluate the learner's ability. These four learning styles include: a) concrete experience, b)reflective observation, c)conceptualization, d) active experimentation. Ultimately with regard to the overall score gained by each student, it would be indicated that the students is placed in which one of four learning styles. The mentioned questionnaire has been examined in terms of reliability and validity in iran [22], [23], [24] and the acquired coefficients are acceptable according to Cronbach's alpha.

2. Strenberg thinking styles questionnaire: This questionnaire is a self –report test that was designed by Strenberg and Wagner [17]. It includes 13 subtests and 104 questions, so that each 8 questions included in the test evaluate one subtest. Since this research investigates only 3 subtests of thinking styles function, the 24-question test would be used as a tool for the above mentioned procedure. Abolghasemi et al [5] showed that the reliability coefficient for the aggregate 3 functions was 0.75, and Shokri et al [21] calculated the reliability coefficient by Cronbach's alpha for three judgmental, executive and legislative styles that they were 0.71, 0.68, o.74respectively.

In this questionnaire the answer to each question is calculated according to the seven degree likert scale. The questions 1 to 8 evaluate judgmental learning style, 9 to 16 evaluate legislative learning style and questions 17 to 24 evaluate the executive learning style.

3. The researcher –made questionnaire of students' academic self–efficacy: Because there was not a special questionnaire for testing the student academic self–efficacy for English lesson, the authors, inspired by Owen and Froman's questionnaire of academic self-efficacy and Solberg et al [17] academic self–efficacy questionnaire provided the academic self-efficacy questionnaire for English lesson. The view points of ten English language experts were also taken into consideration in order to examine its reliability and validity and it was shown that its reliability was 0.94 and its validity was 0.86.

RESULTS

First hypothesis:

With regard to the results of table 1 at the level of 0.01, the correlation coefficient between the judgmental thinking style and academic self-efficacy was 0.53, that showed a significantly positive relationship between these two variables. Finally at the level of 0.05 the correlation coefficient between executive thinking style and academic self-efficacy was -0.40 coefficient, that showed a significantly negative relationship between these two variables.

Table 1. Pearson correlation coefficient showing the association between thinking styles and academic self-efficacy

Variable	Regulatory style	Judgment style	Executive style
Self-efficacy	0.62**	0.53**	-0.40*

*p<.05   **p<.01

Second hypothesis:

In table 2, at the level of 0.01, the correlation coefficient between self –efficacy and concrete experience is 0.64, which again indicates a positively significant relationship between both of variables. Also at the level of 0.01 correlation coefficient between abstract conceptualization element and academic self efficacy is 0.65, which showed a significantly positive relationship between these two variables. And finally at the level of 0.01, the correlation coefficient between active experimentation and self-efficacy was 0.42 which again showed a significantly positive relationship between these two variables.

Considering the results of table 3, among the predictive components, 5 components of legislative style, concrete experience, reflective observation, abstract conceptualization, active experimentation predicted self-efficacy significantly. The correlation coefficient of these 5 components with self- efficacy variable was 0.87, that generally predicted 0.76 percentage of self- efficacy changes . Also in this table, *B* value and constant value were presented for each of components. *B* value for the judgmental style was 0.04, for the legislative style was 0.21, and for the executive style was -0.01. Also *B* value for the concrete experience was 0.35, and for the reflective observation was 0.25, and for the abstract conceptualization is 0.26, and finally for the active experimentation component it was 0.17. Also, constant value for all of the components was 4.98. Ultimately, from among the above mentioned components, two of the components including the executive style and judgmental style are not significant predictors for the self- efficacy variable.

Table 2. Pearson correlation coefficient showing the association between learning styles and academic self-efficacy

Variable	Concrete experience	Reflective Observation	Abstract conceptualization	Active experimenting
Self-efficacy	0.64	0.58	0.65	0.42

Table 3. Regression coefficient, correlation coefficient, and coefficient of determination

Variable	Constant	β	T	Sig	R	R^2
Judgment		0.04	1.1	0.27		
Regulatory		0.21	6.18	0.001		
Executive	-4.98	-0.01	-0.2	0.84	0.87	0.76
Concrete experience		0.35	12.01	0.001		
Reflective Observation		0.25	8.06	0.001		
Abstract conceptualization		0.26	8.2	0.001		
Active experimenting		0.17	6.13	0.001		

With regard to the results contained in table 4, F value (160.37) and the significance level (0.01), it was concluded that the occurring regression was significant, and the acquired information were valid.

Table 4. Analysis of variance for the significance of regression

Model	Sum of squares	Df	Mean of squares	F	Sig
Regression	33648.47	7	4806.92		
Residue	10760.58	359	29.97	160.37	.01
Total	44409.05	366			

Hypothesis 3:

In table 5 it can be observed that regarding academic self- efficacy, there is a significant difference between humanities students and technical students at the level of 0.01.

Table 5. Independent samples t-test for comparing self-efficacy with regard to field of study and gender

	Mean	Standard deviation	T	Df	Sig
Humanities	54.81	9.67	5.97	365	0.01
Engineering	61.60	12.29			
Male	64.41	13.46	0.16	364	0.01
Female	57.22	10.14			

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In other words, the average of self- efficacy among humanities students is 54.81 and among engineering students is 61.60, which indicate that academic self- efficacy among most of the engineering student is more that humanities students. Also the level of academic self- efficacy is different among male and female students, that the average of this academic self- efficacy among male students is 64.41, and the average of academic self- efficacy among female students is 52.22, which shows that self- efficacy among male students is more than female students.

Hypothesis 4:

As it is observed in table 6, there is a significant difference between the students thinking styles in terms of gender and field of study. Regarding gender, male students have more judgmental thinking style, but female student have more executive style.

Also in terms of the academic course, humanities students have executive thinking style, but the students of engineering have more legislative thinking style.

Table 6. Chi-square test showing the difference in thinking style with regard to field of study and gender

C	Regulatory	Judgment	Executive
Male	79	104	59
Female	32	36	57
Total	111	140	116
Humanities	37	38	62
Engineering	106	72	52
Total	143	110	114

Hypothesis 5:

Considering the results of table 7, there is a significant difference between learning styles of students in terms of gender and field of study. Regarding gender, male students have the assimilation learning style, but female students have the divergent learning style. Also considering the field of study, humanities students have more accommodate and divergent learning style, but engineering students have more assimilate and convergent leaning style.

Table 7. Chi-square test showing the difference in learning style with regard to field of study and gender

C	Convergent	Divergent	Adaptive	Absorptive
Male	65	47	52	78
Female	37	43	29	16
Total	102	90	81	94
Humanities	23	57	46	11
Engineering	79	47	33	71
Total	102	104	79	82

DISCUSSION

As it was observed, and the conclusion correlation coefficient between the judgmental thinking style and the self- efficacy of students was 0.53 which indicated a significantly positive relationship between these two variables. The findings of this hypothesis were consistent with the finding achieved by Abdullahzadeh [9], Nateghian [10], Saroghad et al [19], Abolghasemi Najafabadi et al [5], Peermohamadi et al [20], Moradi [12], Strenberg and Wagner [17]. In fact, people using this style tend to evaluate the role and judge about things.

These people concentrate their attention on the evaluation of outcomes of other's activities, and also tend to evaluate the existing, laws, structures, and methods.They prefer those assignments that are related to analysis and evaluation of things and beliefs. Therefore these kinds of evaluation and analysis could improve the amount of self- efficacy and academic performance of students in turn. The correlation coefficient between the legislative thinking style and the academic self- efficacy of students was 0.62 that indicated a significantly positive relationship between these two variables. Findings of this hypothesis were consistent with the findings of Abdullahzadeh [9], Nateghian [10], Abolghasemi Najafabadi et al [5], Peermohamadi et al [20], Moradi [12], Strenberg and Wagner [17]. But this was not consistent with findings achieved by Rezayee [11]. In fact, people having this style, prefer assignments, and projects and tasks which are created according to their plan and people with legislative style like to do the things according to their desires. They are also interested in creating, compiling and planning the affairs. Also these people prefer those jobs in which they could practice and satisfy their own desires and legislative tendencies. Therefore these kinds of planning could improve self- efficacy and academic performance of students. But the correlation coefficient between the executive thinking style and the academic self- efficacy of students was 0.40, that indicated a significantly negative relationship between these two variables, The finding of this hypothesis was consistent with the findings of Zhang [18], Shiri et al. [1], and

Strenberg et al. [17]. But at the same time these findings was not consistent with the findings of Abdullahzadeh [9], Saroghad et al [19].

In fact people with this style like the jobs which are full of directions and guidelines, and they do not show any creativity in their job. They like to obey the rules and use the existing methods in their jobs. They also prefer pre-arranged issues. Therefore obeying in such an indiscriminate way, and preferring pre-arranged issues by themselves would reduce self- efficacy and academic performance of students.

Also the correlation coefficient between the concrete experience component and the academic self- efficacy of students was 0.64, which again indicated a significantly positive relationship between these two variables.

These finding were consistent with the findings achieved by Panahi et al [7], Karimi [8], but they were not consistent with Kellys' findings [16]. Generally, learning styles are accounting for a part of learners' input feature. Therefore instructors in encountering with different learners should know that each of them might do their learning affairs and assignments with a certain style of learning. The correlation coefficient between the reflective observation component and academic the self- efficacy of students was 0.58, which indicated a significantly positive relationship between these two variables. This finding is consistent with the findings achieved by Panahi et al [7], Kadivar et al [2]. But it is not consistent with Kellys' findings [16]. In fact, English teacher's awareness of students' learning styles can help the better presentation in class, and lessen the effect of individual differences in learning. The correlation coefficient between the abstract conceptualization component and the self- efficacy of students was 0.65, which indicated a significantly positive relationship between these two variables.

These findings are consistent with the findings achieved by Kadivar et al [2] and Panahi et al [7]. But they are not consistent with Kellys' findings [16]. Although it could be possible to teach scholars about more effective strategies and styles of learning, however each learning style is a personal characteristic that might be the best for the learner. Thus professors should adjust their communicative and teaching styles with the learning styles of student as much as possible. Previous researches on learning styles have shown that the students academic success will increase if they are taught based on their preferences in receiving and processing information.

Also the correlation coefficient between the active experiment component and the academic self- efficacy of student was 0.42 that showed a significantly positive relationship between the two variable. These findings are consistent with the findings achieved by Kadivar et al [2], Karimi [8], but they are not consistent with Kellys' findings [16]. In fact the English teachers' awareness of student's learing styles could help the presentation of material class in a way that it leads to the increasing of learning and cognitive performance, and also results in the reduction of the effects of individual differences. As was previously observed, there was a significant difference between the student of humanities and technical fields in terms of academic self- efficacy.

But the level of academic self- efficacy was equal between male and female students. This finding is consistent with the findings achieved by Khaksar Beldaji [25], Schunk [14], Pajares [15]. For creating or increasing the self- efficacy of students it is required that they be aware of the learning styles in each field of study and also be aware of related jobs in order to achieve success in their occupational and academic fields. Some strategies should also be considered to adjust the teaching methods and styles of professors at university with the special learning styles in each field of study to achieve a suitable education, and help student to be able in learning the fundamentals of their own field of study, and help them use their own knowledge in a practical way in order to be self –efficient. In fact self–efficiency is the base of human's action, and self –efficient students are usually creative, deep-minded and self-organizing and in order to create suitable consequences, use their influential ability when acting. As a whole, self–efficient students choose assignments that involve more challenge and usually choose bigger goals for themselves. Students with a high level of self-efficiency in spite of obstacles and negative consequences, usually persevere more than usual. They are able to overcome failures and disappointments, and would also pursue their own way in a better manner. There was also a significant difference between the thinking styles of students in terms of gender and field of study.

Considering gender, male students usually prefer judge mental thinking style, but female students prefer the executive thinking style. Also in terms of the field of study, humanities students often have the executive thinking style, but engineering students often have the legislative thinking style. This finding is consistent with the findings achieved by Abolghasemi et al. [5]. Thinking styles currently have been considered by many experts and researchers as one of the influential variables of behavior. Various studies have showed that thinking styles are related to creativity, problem solving, decision making and academic success, and factors such as culture, gender, age, academic field of study, occupational background, parents styles could affect people's thinking styles. Thinking styles also include limitations and forces that grow during life time. Therefore learning affairs should be presented with regard to age and situations in which learners are, and each period of life can determine certain materials related to that period.

Knowing learners` styles instructors could help the learners to be aware of their learning habits, and also apply better learning strategic. Also instructors can increase the learning enjoyment by being aware of methods, resources and situations in which learners can learn better, and also by utilizing them in a correct way.

Finally there was a significant difference between the learning styles of students in terms of gender and field of study. Regarding gender, male students had more assimilate learning style, but female students had more divergent learning styles. Also considering the field of study, humanities students had more accommodate and divergent learning style, but engineering students had more assimilate and convergent learning styles. These findings are consistent with the findings achieved by, Khaksar Beldaji [25], Homayuni and Kadivar [26], but they

are not consistent with the findings of findings of Kolb et al. [13]. As a whole, learning styles are considered as part of input features of learners. Therefore instructors in with dealing different learners should accept that each learner might learn and do their assignments with a certain style of learning. Although it could be possible to teach more effective styles and strategies of learning to various students, but each style of learning is a personal characteristic which may be the best for the learner.

As mentioned before, one of the main issues of education in the present age is how to educate students such a way that their thinking style would be suitable and coordinated with the complicated and variable situation of the present age and with the challenging situation of future. Each student has his own learning style.

These styles would influence our learning rate under certain circumstances.

Some students learn better by listening, whereas some others learn better through reading. Those learners who do not pay attention to the learning strategies correctly. Those would lose their desire and motivation for learning and progress very soon, because unfamiliarity with learning styles and their own weakness learning during academic period, would lead to undesirable effects on the students' spirit. Many learners get tried of education and drop out of the course due to the mere reason of unfamiliarity with their abilities and their unique learning styles.

This opinion that the existing differences in learning are merely due to the differences in people's abilities and intelligence, had overshadowed the world of education for a long time but today this view has changed and it is obvious that people's difference in learning is related to some extent to their abilities and intelligence and some other factors such as personality characteristics, and the difficulty of assignments also affect their learning difference. Despite efforts made to seek a special teaching method, researchers, have discovered that it could not be possible to consider a certain method as the best teaching method. Each method has its own advantages and disadvantages, and also its effectiveness relates to numerous factors.

Numerous factors can bring about a good teaching.

Adjusting teaching styles in order to coordinate them with the educational materials and learners leads to a more effective and better teaching. This view causes researchers to commence a discussion about the persistent need for understanding various educational styles in classroom. Generally students show different preferences as to where and how they want, and instructors are expected to consider these items in teaching in order to support the students learning. Instructors can use accessible equipments, such as a peaceful atmosphere of the classroom, big tables, good chairs, video, tape recorder and etc. These methods help learners at least learn and work according to their preferential style sometimes. In the end, considering the importance of various thanking styles and learning styles among students, it is recommended that material writers include a general subject unit in their program named' the familiarity with different learning styles and different thinking styles and their importance in academic performance.

Also regarding the importance of self-efficacy of students, it is recommended that the professors and authorities conduct some studies about obstacles of students self-efficacy and attempt to overcome these obstacles, and also about the methods of improving self-efficacy among students.

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