The Relationship between the University Students' Learning Styles and Problem-solving Strategies, and their   Achievement Motivation at Azad University of Ahvaz

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Abstract

The aim of the present study is to investigate the relationship between the university students' learning styles and problem-solving strategies, and their achievement motivation in Azad University of Ahvaz. The population included 374 students-168 females and 206 males- in B.A.   Selected through stratified random sampling. The research design was correlational, and the research data were collected through Kolb's Learning Styles Instrument (LSI) (1985), Cassidy and Long's (1996) Problem Solving Strategies Questionnaire, and Achievement Motivation Test (AMT) (1970). The collected data were analyzed through Pearson's correlational coefficient and multivariate Regression in the level of $\alpha=0.01$. The results showed that, in among the learning styles (objective experience, active experimentation, abstract conceptualization, view reflection) and achievement motivation, just there was a relationship between active experimentation and achievement motivation. Also, there was a relationship between problem-solving strategies (helplessness, controlling, creativity, trust, avoidance, the approach) and achievement motivation, except controlling and achievement motivation. Moreover, the findings revealed that the problem solving strategies such as approach, avoidance, trust and helplessness were the best predictors of achievement motivation.

Keywords: learning styles, problem-solving strategies, achievement motivation.

Introduction

Achievement motivation is considered as one of the important issues that affects individuals. It makes them try to achieve positive goals. So, someone who has such characteristics, may develop in all aspects regardless of time and place features. Motivation is the relative stable time approach or behavioral approach which does not depend on situations. One example is achievement motivation. Motivation is a collection of complicated organism-based and environmental   variables whose action leads to sensational or behavioral oriented general activities (Khodapanahi, 2014). In fact, achievement motivation consists in a model of

planning, activities and senses related to attempts to achieve a kind a superiority (Ball, 1977; qtd in Mosadad, 1994). Mastery consists in getting knowledge and developing the skills. To master a thing, an Individual learns everything about it, or develops the required skill   at its highest possible level. Achievement involves achieving a goal such as getting a university degree. A high level of achievement usually- but not always- calls for mastery. Also, someone may achieve a goal without mastery. To get achievement, not only a collection of skills, or experiences are needed, but also it is necessary to get along with emotions such as self-doubt. In fact, mastery is important, but it is not a guarantee to achieving the goals.

People who have mastered the direction of progress and achievement find a sense of empowerment. They react so that they can get what they long after. When parents encourage early independence and mastery, children get upper scores in achievement motivation. In order to measure motivation, the students were asked to tell imaginative stories. So, the imagination used related to achievement motivation is measured as scores. This is time-consuming, but it brings much higher reliability and validity. The studies showed that when students are encouraged to have independence and mastery, they will have much more achievement motivation. McClelland et al. conducted a study in order to determine whether motivation can develop through time and whether it is the result of the accumulation of days. They investigated achievement motivation in various ages. The findings revealed that there is a direct relationship between achievement motivation, and independence and mastery (Francen, 2002; translated into Persian by Shams Esfandabad, Mahmoudi and Imami, 2013). The strong flexible attempts results from sociability effects if the parents meet the following: their children make relatively strong efforts, training independence (self-reliance, self-determination), high-performance goals, realistic superiority criteria, excellent ability self-image (this is so easy to do), valuing work related to progress, clear criteria for superiority, a family environment full of stimulation (books to read), extensive experiences such as travel, and providing childrens' books full of imaginative stories related to achievement. After years of research, the attempts to determine sociability methods in more motivated individuals was successful to a degree, because longitudinal findings suggested that the achievement efforts changed remarkably through childhood to adulthood with a great change from a decade to the next. The beliefs, values and senses related to achievement indicate a predictable development pattern. Children cannot evaluate their real abilities correctly. They have irrationally high beliefs about their abilities, and cannot lower their beliefs after failure, paying much attention to their peer performances. They rely on more perfect knowledge to form relative real abilities beliefs in their late childhood, and evaluate them by comparing them to peer, teachers, and parents. Regarding values, children attach high importance to others' confirmation, while pay less attention to their achievement. It is essential to internalize the values associated with development, for example when parents pay much or little attention to achievement. Motivation is an internal state that determines the type, direction, and energy required to do a thing (Shoa'rinejad, 2002). It is a process contributing to motivation, orientation and continuance (Ball, 1977; qtd by Mosadad, 1994). Motivation is a process by which the goal -oriented behavior is initiated and maintained (Shank, 1990; qtd in Khodapanahi, 2014).

Achievement motivation exists in all educational stages and almost important to all students, and frustration in it causes anxiety among students. Sometimes failure to get educational achievements, engenders challenges that are mostly psychological (Sho'arinejad, 2002). Gage and Berliner (1984, qtd in Seif, 2014) define the achievement motivation as an approach to general success or success in a special field. Ames and Archer (1988; qtd in Glaver and Bruling, 1990; translated into Persian by Kharazi, 2008). Achievement motivation is related to the students' difference on motivation to achieve in schooling. The basic determinant of learning especially educational achievement is the motivation governing learners. A motivated individual or a person finding himself in need of learning a special field learns without expectation to get reward doing anything he can do. In fact, the absence of motivation causes poor learning. Achievement motivation or absence of achievement is related to learning a set of material or curriculum presented to the learner

through a school year (Sho'arinejad, 2002). It is a relative stable change in behavior or possible behavior resulting from experience .It cannot be ascribed to temporary body conditions such as diseases, fatigue, or drugs (Seif, 2014). They are innovative behavioral-cognitive processes by which one invents and discovers effective and adaptive strategies to cope with everyday life difficulties (Dzorilla and Sheedy, 1992). Is there any relationship between learning styles (objective experience, active experimentation, abstract conceptualization, view reflection) and problem solving strategies (helplessness, controlling, creativity, trust, avoiding the approach) and achievement motivation?

The relationship between learning styles and problem solving strategies with achievement motivation is discussed due to their close interrelation. Lack of awareness in learning styles and coping strategies brings great educational challenges to the students and the whole members of the community. The aim of the present study is to present solutions to the problems related to education among students so that they can acquire effective achievement. With the passage of time, and the sophistication of life, the he needs change and increase so that human beings have to solve the new problems through the power of creativity. So, the problem-solving ability through creativity has become the key to the challenges. Nowadays, the scholars and researchers' attempts focus on developing various educational styles that help to foster problem-solving abilities based on creativity. Applying various innovative strategies plays an important role on the students' achievement regarding the time and place conditions, so that a hopeful, clear future opens up to the students. One of the human's main concerns is to be capable member of the society in future, and keep and transfer the cultural heritage. Firstly, family can do the duty. With the development of societies and the distribution of the social and economic functions, this duty was left to the

education system. The youth can get the scientific growth and psychological health through education and increase in their information. Contrarily, in the case of lack of educational achievement, the individuals' mental health is damaged due to the stresses. This is harmful both to the individual and the society. Some possible reasons are: the person's unawareness of individual learning styles, and individual coping strategies against difficulties, and the inability of the mass media and educational centers to inform people. Moreover, achievement motivation is a model to plan intrinsic behaviors and emotions, and changeable through parents' behavioral styles. Parents usually train their children based on their attitudes and views (Ball, 1977; translated by Mosadad, 1994).

Motivation consists in internal conditions of organisms which causes them to conduct certain behaviors to achieve a goal (Morgan, King and Robinson, 1984). Generally, motivation is defined as the human activities and its respective factors. Some liken motivation to an engine and automobile steering wheel. In this simile. Direction and power are considered as the main concepts of motivation (Gage and Berliner, 1984; qtd in Seif, 2004). Motivation is a concept usually regarded as equivalent to motive, while motivation is more precise than motive as a certain condition to manifest a certain behavior (Racell, 1971; qtd in Seif, 2004).

Motivation and achievement constitute a model of planning, activities and senses related to the attempts to acquire superiority. Achievement motivation is like an attempt to get observable successes such as high scores in exams, and acceptable situations. The attitude to have achievement is important rather than the achievement in itself (Ball, 1977; translated into Persian by Mosadad, 1994). Atkinson and Mcceland believe that achievement motivation is the search to get success in competition with high standards (Rew, 2005; translated by Seyyed

Mohammadi, 2013). In fact, the achievement motivation is the desire or approach to go ahead and make manifest behavior which can turn into to certain criteria (Corman, 1997; translated by Shekarkan, 2007). Rabinz (1993; qtd in Rio, translated by Seyyed Mohammadi, 2013) maintains that achievement motivation is an approach to outdo others and attempt to get success and progress with regard to personal criteria. Psychologists suggest that achievement motivation is an approach and eagerness or attempt to achieve a goal, overcome the obstacles in order to get success. This requires good planning and much effort. Mcceland et al. were the first who started the studies on the nature of and, the way to evaluate achievement. They considered the reasons for the success and failure of the ancient civilizations and the models of economic development. They took into account the psychological and social factors of ancient peoples. They believed that the difference is in the level and extent of achievement motivation as the effective factors in the growth and decline of civilizations. In fact, the need for progress is a general concept that shows the direction of a set of personality attributes. Generally, the needs to get success cannot be confined to job or business. In order to get a clear understanding of the learning attitudes and personality, there are new assumptions should be made, and new strategies should be considered. According to such view, there are two main assumptions which have been often criticized. The first one is that almost all human behaviors are learned behaviors, and the second is that in testing hypotheses, precision and objectivity are necessary. While, Aysnk and Katel, define learning as a part of personality psychology, they personality psychology in a more general area of learning.

The behavioral-learning psychologists speak of behavior therapy and correction instead of psychotherapy. They change certain behaviors rather than solving the internal conflicts or the reorganizing the personality, because most problematic behaviors can be learned, changed or forgotten. Emphasizing on the precision and objectivity of testable hypotheses and control the experiment variables are of great importance. This leads to much attention to studying behaviors in laboratory, simpler behaviors are preferred to complicated behaviors. Emphasis is placed on external factors rather than internal ones. In behavioral learning, the researcher manipulate the environmental variables and studies the results. The psychological dynamics theories focus on internal factors such as instincts, defense mechanisms, structures, self, while learning psychologists emphasize on the external factors. In this view, those environmental stimuli which can be manipulated through experiments, are emphasized instead of psychodynamics factors that cannot be manipulated. The focus of behavioral view is on the external and environmental determinate factors and certain behaviors in certain situations. The learning psychologists, unlike the emphasis of the psychodynamics theories on the attributes or characteristics used in various situations, believe that the homogeneity and similarity in behaviors is due to the closeness that exists in the environment provoking certain behaviors (Pervin, 2001; translated by Javadi and Kadivar, 2005).

The existence of diversity in the phenomena is one of the important facts in our world. Not only animals and plants are different, but also the members in each kind are not the same. The students are different in their cognitive abilities, learning styles, learning pace, readiness and eagerness to get knowledge, and doing the educational tasks. So, teachers should pay close attention to the students' personality difference, and react to their attributes in an appropriate manner because this can improve their learning quality and enhance their achievement. The various factors create different situations among learners. The diversity in learning styles, thoughts, strategies and methods, learning and

study has drawn on the attention of educational psychologists and experts in the recent years. Problem solving has been considered as one of the important aims of education through the history of education. One of the teachers' and parents' desires has been to help the students gain the ability to solve problems. The psychologists and scholars have emphasized on the importance of activities related to problem solving strategies in effective and useful learning (Seif, 2014). When an individual has nothing at disposal to work on, creative thinking is impossible to emerge. In fact, creative thinking involves connecting the previous experiences to new experiments. Success in solving a problem relies on previous learning and knowledge. In other words, if we ask an adult to solve a problem, firstly we should give him opportunities to get the required knowledge (qtd in Ahmadi, 1996). The problem-solving ability has There is a wide spectrum of problem-solving capability in psychotherapy, social works, general medicine, and consultation, It is widely used in crisis management (Hawton and Salkovskis, 2008; Ghasemzadeh, 2009). Applying the problem solving strategy as a behavioral-cognitive process, an individual can discover the effective ways to be compatible with conditions and events that result in communicative behavioral reactions. Casidy and Lang (1996) define the problem-solving strategy as a behavioral-cognitive process which individuals use to have effective strategies for behaving in both problematic and ordinary situations (qtd in Mohammadi and Sahebi, 2001).

Derozilla and Goldfrid (1971) define problem solving as a behavioral process whether cognitive or explicit. 1) Making accessible potentially useful alternative responses for tackling difficult situations, and 2) increasing the likelihood of the selection of the most effective response among the different alternatives (Mohammadi and Sahebi, 2001). Problem solving is a critical skill in modern life. Nowadays in all activities,

practitioners are led to use higher-level thinking skills in both general and technical areas whether in problematic or usual situations (Woow 1996; qtd in Baba Pour Khierodin Vajehee, 2002). In other words, problem solving as a high mental activity is a kind of learning in which the learning conditions and definition are presented. So, learning and problem solving lead to new knowledge and skills (Seif, 2014). To clarify the notion of educational achievement motivation, first the notion of educational decline as a reciprocal notion should be clarified. Educational decline is the decline in college and school students' educational performance from a satisfactory to unsatisfactory level so that a significant difference can be observed between the potential talents and actual talents in educational performance. Such a difference is called educational decline. It is obvious that educational decline is not limited to exam drops .It is true for everyone whose learning is lower than his potential, expected abilities and talent. If an individual's school learning is appropriate to his potential talent and abilities, and there is no distance between the potential and actual talent, it can be said that the student has acquired educational achievement.

Nowadays, achievement motivation may be observed more than past. Many youth are eager to attend universities, and continue their studies. The results of studies show that the possession of high achievement motivation can lead to success. For example, if two students, or two employees are the same in their cognitive abilities, but different in their achievement motivation, the results will be different to the benefit of one who possesses a stronger achievement motivation (Ganji, 2013). Achievement motivation is a plan or attempt to get success and perfection. The studies suggest that achievement motivation can reflect in the values governing the society. These values are related to economic growth, political structures and cultural patterns of communication. In fact, the achievement

motivation is able to provoke students to study hard. McCleland suggested that the achievement motivation would facilitate learning. Individuals who have high achievement motivation are more serious and hardworking learners. Learning is one of the main variables in psychology that refers to making the relative stable changes in behavior or ability resulted from experience. Teachers' paying attention to learners' personal difference including learning preferences is very important. It can improve the learning quality and increase the achievement. Learning style is a certain stable structure in individuals by which they are able to identify, process, correct and signify the stimuli. There are different learning styles. They can be divided into three categories: cognitive, emotional and physiologic. In order to improve the quality of teaching and learning, those variables should be identified that are related to learning styles and affect learning process such as teaching strategies, the educational activities related to leaning style, intelligence, motivation, and so forth. The present research seeks to study the relationship between learning styles- concrete experience, active experimentation, abstract conceptualization, reflective observation- and problem-solving strategies- helplessness, controlling, creativity, trust, avoidance, approach .

So, some hypotheses are presented as follows:

1. There is a simple relationship between different learning styles -concrete experience, reflective observation, abstract conceptualization, active experimentation- problem solving strategies (helplessness, controlling, and creativity, avoidance, and approach) and achievement motivation.

2. There is a multiple relationship between different learning styles -concrete experience, reflective observation, abstract conceptualization, active experimentation- problem solving strategies (helplessness, controlling, and

creativity, avoidance, and approach) and achievement motivation.

Research Methodology

Participants

The present work is a correlational and cross-sectional study. The population included all male and female B.A. students of different fields in the Ahvaz Branch of Islamic Azad University in the academic year 2014-2015. 374 students were selected as the research sample using Morgan Table.

Instrument

Hermans' Achievement Motivation Test (AMT): Hermans (1970) designed an achievement motivation test as the most common paper-pencil questionnaire to measure the students' achievement and presented it based on the theoretical and experimental knowledge of the need for achievement. First, 92 questions were constructed, then 29 questions were presented as the final questionnaire in order to determine the correlational coefficient. High scores indicate high achievement motivation but low scores indicate low achievement motivation, points are allocated from 1 to 4, the higher the point is the   stronger the achievement motivation. Hermans (1970) used content validity in order to estimate the validity based on the relevant studies. Hermans estimated the correlational coefficient in two questions which showed high reliability (r= 0.88). (qtd in Tamanaifar and Gandomi, 2011). In Tamanaeefar's study, two methods of Cronbach' Alpha coefficient and test-retest were used after three weeks to estimate the reliability, and reliability in the two methods were calculated to be 0.82 and 0.85 respectively. In the present study, the reliability of achievement motivation was obtained to be 0.69 through Cronbach's Alpha coefficient.

The Learning Styles Instrument (LSI): This questionnaire was designed by Kolb (1985). It evaluates the individuals' learning styles in two dimensions of   concrete experience- reflective

observation- active experimentation. Combining these dimensions gives us four styles: convergent, divergent, assimilating, accommodating. The questionnaire contains 12 sentences with four choices suggested for each sentence. The testees should rank the suggested responses from 4 to 1 based on his learning style so that in every sentence, the choice that has the highest conformity to the testee's learning style gets 4, and average and poor conformity or lack of conformity get 3, 2 and 1, respectively. In order to determine the subject's learning style, the first choices of the 12 questions are added, and this will be repeated for the second, third, and fourth choices. So, 4 scores are obtained for the learning styles. The first total score is assigned to the concrete experiment (CE), the second total is assigned to the reflective observation (RO), the third total score goes to abstract conceptualization (AC) and the fourth total score is assigned to the active experimentation (AE). The highest score indicate the testee's dominant learning style (Kolb, 2005; qtd by Gharamaleki, Hajloo, and Gholamzadeh, 2013). Kolb has reported the reliability of the four learning styles by this instrument as follows: concrete experience= 0.82, reflective observation= 0.73, abstract conceptualization =0.83, and active experimentation=0.78, acquisition styles (abstract conceptualization-concrete experience) =0.88, experience and pragmatism (active experimentation. reflective observation) =0.81. Sobhi Gharamaleki et al. (2013) reported the reliability of sub-scales as follows: concrete experience= 0.81, reflective observation= 0.76, abstract conceptualization= 0.85, active experimentation =0.73, acquisition styles= 0.883, experience and pragmatism=0.74. In the present study, the reliability was calculated by Cronbach's Alpha coefficient and reliability of the four sub-scales was obtained as follows: concrete experience =0.67, reflective

observation= 0.81, abstract conceptualization= 0.80, and active experimentation= 0.75.

The Problem Solving Styles Questionnaire: This questionnaire was designed by Cassidy and Lang (1996) in two steps. It contains 24 questions-12 items of which measures the problem-oriented style and the rest 12 items measures the emotion-based problem-solving style. Questions from 1-4 show helplessness style, 5-8 controlling the problem, 9-12 creativity level, 13-16 confidence in problem solving, 17-20 avoidance, and 21-24 approach (Ahangi, Abedi, Fath Abedi, 2009). The items are scored in a three-alternative scale: yes, I don't know and no. A yes response gets 2, no gets zero, and I don't know gets 1. Then, the sum of these scores show the total score in each of the six factors. So, each factor which has 4 items, has a score equal to at least zero and at most 8. Each factor that has the highest score show that the individual uses that strategy to solve routines problems. The set of helplessness, controlling the problem, and avoidance indicates the unconstructive and emotion-based. Also, the approach to problem, creativity and confidence in problem solving constitute the constructive problem solving (Irani, 2004). The reliability and validity of the items in problem solving strategies were evaluated by Cassidy and Lang (qtd in Edalati Shateri, Ashkani and Moddares Ghorouri, 2009). Cassidy calculated the validity as follows: helplessness =0.80, control= 0.71, creativity =0.78, approach style= 0.73, and avoidance= style 0.71 (Cassidy, 2009). This questionnaire has been used in different studies in Iran. Cronbach's Alpha was calculated to be 0.37-0.72 and the correlation was estimated to be 0.20-0.39 (Mohammadi, 2004; Edalati et al. 2009). In the current study, the Cronbach's Alpha was estimated as follows: helplessness = 0.72, control =0.76, and creativity= 0.73, confidence= 0.75, approach style] 0.81, and avoidance style= 0.69.

Results

Table 1 shows the descriptive statistics of the participants' obtained scores in the variables under.

Table 1. Mean, standard deviation, maximum and minimum scores of participants

Variable	Mean	Std.	Minimum	Maximum
Concrete experience	34.09	4.490	14	44
Reflection observation	28.33	3.426	20	37
Abstract conceptualization	28.02	4.180	17	40
Active experimentation	29.56	3.821	10	42
Helplessness	4.02	2.328	0	8
Problem solving	5.15	1.559	0	8
Creativity	6.22	1.623	0	8
Confidence in problem solving	6.34	1.744	0	8
Avoidance	6.16	1.615	1	8
Approach	7.19	1.516	2	8
Total score of achievement	81.52	8.065	50	102

Table 2. Matrix of Pearson's correlation coefficients

Variable	1	2	3	4	5	6	7	8	9	10	11
Achievement motivation	-										
Concrete experience	0.053	-									
Reflection observation	-0.090	**-0.259	-								
Abstract conceptualization	-0.101	**-0.509	**-0.272	-							
Active experimentation	*0.129	**-0.387	**-0.294	**-0.253	-						
Helplessness	**-0.238	**0.217	*0.116	**0.164	**-0.181	-					
Problem solving	0.072	**0.143	*0.123	-0.079	**-0.195	**0.494	-				
Creativity	**0.382	0.061	-0.019	*-0.111	0.067	**-0.183	-0.064	-			
Confidence in problem solving	**0.409	0.069	0.005	-0.084	0.004	-0.207	0.014	**0.543	-		
Avoiding	**-0.242	**0.230	0.015	-0.245	-0.024	**0.371	**0.285	**0.209	**0.168	-	
Approach	**0.504	**0.139	-0.026	*-0.130	0.002	0.015	0.056	**0.459	**0.503	**0.359	-

As it is seen in Table 2, there is a significant correlation between parenting styles, active experimentation (P=0.129) and between parenting styles, helplessness (P=-0.238), creativity (P=0.382), confidence in

problem solving (P=0.409), avoidance style (P=-0.242) and achievement motivation in the level of P<0.05.

In order to analyze the data, the stepwise regression was used in which the achievement motivation was considered as the benchmark variable and problem solving strategies as predictive variables.

Table 3.the regression results

Indices	MR	RS	F & P	β , B					a
Predictive variables				1	2	3	4		
Approach	0.504	0.254	F=126.690 P=0.0001	2.681 0.504 11.256 0.0001				B β t P	62.246
Helplessness	0.561	0.314	F=85.022 P=0.0001	2.700 0.508 11.806 0.0001	-0.851 -0.245 -5.709 0.0001			B β t P	65.531
Avoiding	0.587	0.345	F=65.007 P=0.0001	2.315 0.435 9.566 0.0001	-1.110 -0.320 -7.003 0.0001	1.021 0.205 4.176 0.0001		B β t P	63.053
Confidence in problem solving	0.597	0.357	F=51.143 P=0.0001	1.991 0.374 7.335 0.0001	-0.999 -0.288 -6.131 0.0001	0.964 0.193 3.955 0.0001	0.595 0.129 2.569 0.011	B β t P	61.521

According to table 3, there was a multiple correlation coefficient between some predictive variables such as approach, helplessness, avoidance and confidence in problem solving and achievement motivation. The multiple correlation coefficients were significant in P≤0.01 to the linear combination of variables and achievement motivation in MR=0.597. The obtained coefficient was RS=0.357. Regarding the results of Table 3 and the obtained coefficient, almost 35.7% of achievement motivation was determined through predictive variables such as approach, helplessness, avoidance and confidence in problem solving style. As Table 3 indicates, variables such as approach (β=0.504), helplessness (β=-0.245), avoidance style (β=-0.205) and confidence in problem solving style (β=0.129) had the capability of making achievement motivation.

Conclusion and Discussion

The aim of the present study is to investigate the relationship between learning styles (concrete experience, active experimentation, abstract conceptualization, and reflective observation), problem solving strategies (approach, confidence in problem solving, creativity, avoidance, controlling the problem solving, and helplessness) and achievement motivation among students at the Ahvaz Branch of Islamic Azad University. The results showed that among the different learning styles, there was a significant positive relationship between just active experimentation and achievement motivation. In the other hand, an increase in the active experimentation caused an increase in the achievement motivation among students. The results were consistent with Cano-Garcia and Hughes (2000), Ali Abadi (2004; qtd in Seif, 2014), Farajollahi, Najafi, Nosrati Hashi and Najafian (2013), Taghi Pour Karan and Reza

Pour Darvish (2013), Zare Asad Abadi, Kazemi and Meidokht Rezaee (2011), Mohammad Zadeh, Shahani yelagh and Mehrabi Zadeh Honar Mand (2009). Achievement motivation is the attempt or willingness to master the affairs, individuals and thoughts, and to arrive at a transcendental standard. (Parsa, 2011). One of the most important aspects of achievement motivation is to master the affairs. Perhaps, active experimentation can help to master the affairs. So, individuals who possess higher achievement motivation may use active experimentation in learning more.

Individuals, who have higher achievement motivation, are more interested in the superiority of the self and not because of the rewards. Moreover, they evaluate roles based on opportunities to be superior not due to their credit. Therefore, it may be natural that individuals who have higher achievement motivation seek to employ active experimentation in learning. Because, roles are evaluated and selected based on superiority. These people select roles that involve direct engagement or experimentation because direct engagement provides more opportunities for learning and achievement. Also, people with higher achievement motivation prefer situations in which they can accept the responsibility for their efforts. Certainly, active experimentation is the only active style in which an individual is directly and practically engaged in the learning process. They are interested in controlling the fate so they do not leave the affairs to chance and fortune. They want to make decision based on their evaluations, experiences, and not based on others' beliefs (Ball, 1977; qtd in Mosadad, 1994). In fact, it refers to the necessity of experience. For individuals who like to make judgment based on their experiences, certainly the best way to learn is the way to experience things directly, namely, active experimentation, so the significant positive relationship between active experimentation style and achievement

motivation seems true and natural to a large degree.

In addition, individuals with higher achievement motivation prefer exciting activities, but people with lower achievement motivation prefer quietness (Parsa, 2011). This very attribute can explain, to a certain degree, why people with higher achievement motivation prefer active experimentation learning style because this style consist in more excitement and activity compared to other styles such as abstract conceptualization and reflective observation.

These individuals' interest in achievement is not affected by working in a group, but it originates in working for themselves. They prefer situations in which they accept the responsibility of their efforts, and to control their fate not to leave their life to chance and fortune. They also like to make independent judgment based on their own experience and evaluation not based on others' beliefs. Compare these attributes with those of the people who use active experimentation style, they are effective and pragmatic individuals, prefer practice to speaking and participating in theories. They have higher levels of energy to do actual, rational and useful things, complete things purposefully and effectively, they like doing manual and technical activities. They are highly eager to work .They also like entertainment and fast reaction. They need to be active, and observe tangible results of their efforts, and supervise the work. They always ask how and why. If they are to perform a task, they will do it step by step. They need environments relying on skills so that they can prove their adroitness. The people with his style are effective in finding practical use for views and theories. They like technical activities rather than social and interpersonal relationships. They use first-hand experiences to solve problems through their efforts and enjoy planning and involvement in challenging situations (Seif, 2014). It is clear that these two groups of attributes are highly consistent; in fact,

individuals with higher motivation make more use of the active experimentation learning style.

Among problem solving strategies, just controlling had no relationship with achievement motivation. But, other strategies such as approach, confidence in solving problem, creativity, avoiding and helplessness had significant relationship with achievement motivation. There was a significant, negative relationship between helplessness and avoidance with achievement motivation. In fact, with the increase in these two style, individuals' achievement motivation decrease, but the relationship of approach, confidence, and creativity with achievement motivation was positive and significant. In other words, increase in one of these latter style causes an increase in achievement motivation. This is consistent with the findings of Marandi and Zareei (2011) and Zandi (2004).

Motivation refers to internal states of a living creature that steer it toward a certain goal (Morgan, 1984). Achievement motivation is the attempt to achieve the goals or cope with challenges, individuals and thoughts (Parsa, 2011). Creative problem solving brings with itself knowledge and new skills. It indicates planning and various solutions based on the problematic situations. The confidence strategy points to an individual's belief in his/her ability to solve problems. The approach show positive attitudes against difficulties. All these three strategies are the constructive styles, and suggest that individuals with high achievement motivation possibly use them in challenges. In creative style, individual use various solutions to achieve the goal. It is natural that highly motivated people are more willing to get engaged in problematic situations and considering different solutions. In confidence style, individuals believe in their ability to cope with challenges and, it may originate in their higher approach. In approach style, people experienced challenges, and make efforts directly instead of

escape. Certainly, they use such style when they possess intrinsic motivation to achieve and solve problem.

However, helplessness style as an unconstructive problem solving strategy has negative relationship with achievement motivation. In fact, an increase in this style causes a decrease in the individual's achievement motivation. The helplessness style show helplessness in challenges (Cassidy and Lang, 1996). When an individual experience difficulties, and helpless, it is rational that (s) he may lose his/her inclination to cope with challenges. This leads to a decrease in achievement motivation.

The significant negative relationship of avoidance style as an unconstructive problem-solving strategy, and achievement motivation was a significant result of the present research. The avoidance style points to the approach to ignore difficulties instead of tackling them (Cassidy and Lang, 1996) and it is opposite to approach style. So, its negative relationship with achievement motivation is rational. Individuals who ignore difficulties accept the situations in a passive manner. They are not eager to tackle difficulties. In the other hand, avoidance style causes lower achievement motivation.

A study of the integrated hypothesis showed that the problem solving styles such as approach, helplessness, avoidance, and confidence are the best predictors of achievement motivation. The approach style shows positive attitude toward difficulties and the willingness to cope with them. The highly motivated individuals are more eager to be superior, to overcome difficulties directly. The confidence style in solving problems indicates an individual's belief in his/her ability to solve problems. The helplessness style points to helplessness in challenges, and avoidance style points to ignoring the difficulties instead of tackling them (Cassidy and Lang, 1996). They are appropriate predictors of achievement motivation.

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