Evaluation of academic self-efficacy based on implied intelligence beliefs

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Abstract

Academic self-efficacy mainly refers to individuals' beliefs in relation to their ability to perform a behavior and academic task, achieve the goal and effective coping with stressful environment and the intelligence belief encompasses one's knowledge and belief toward the nature of intelligence. The present study aims to investigate the academic self-efficacy based on the implicit intelligence beliefs. For this purpose, 302 subjects of graduate students of Tabriz University were determined by using Cochran's formula and by random sampling method and completed the measures related to academic self-efficacy and implicit intelligence beliefs. Obtained data were analyzed by using multiple regressions. Results analysis showed that definitive intelligence beliefs have significant and negative relationship with self-efficacy and intelligence increase beliefs have significant and positive relationship with self-efficacy. This means that people having enhanced intelligence beliefs, have high self-efficacy and people who have definitive intelligence beliefs, have low self-efficacy.

Key words: academic self-efficacy, implicit intelligence beliefs, Definitive intelligence beliefs

Introduction

Self-efficacy encompasses one's particular beliefs about certain tasks (Betz, 2000). Bandura (1997) suggests that self -efficacy is a constructive power by which skills of cognitive, social, emotional and human behaviors are effectively organized to achieve different objectives. In his view, having the knowledge, skills and individuals' previous achievements are not good predictors of their future performance. Rather the man's believe about his ability to perform them effect on how their performance. There are clear differences between having different skills and ability to combine them with appropriate techniques for tasks performance in different circumstances. Individuals exactly know what duties to do and have necessary skills to perform the duties, but often fail in appropriate implementing of skills (quoted from RafighIrani, 2006).Self efficacy is not related to a skill or skills, but points to belief of having ability to do work in various positions. Efficiency belief is an important factor in constructive system of human competence. Efficacy is derived of famous psychologist namely Albert Bandura's social cognitive theory (1997), that refers to individual's beliefs or judgments about his abilities to perform the duties and responsibilities. Individual's beliefs about intelligence or implicit theories of intelligence are the science that is constructed in individuals' mind about concept and nature of intelligence (Sternberg, 1985).Intelligence beliefs include the enhanced intelligence belief and innate intelligence belief. The enhanced intelligence

belief refers to this point that quality intelligence is flexible and increasable. In contrast, inherent belief considers intelligence a fixed quality and not increasable. Those students who have enhanced intelligence emphasize on improvement of their competence and acquisition of new knowledge and try to overcome their past failures. While students with an innate intelligence focus on achieving good performance and to overcome the problems do their least effort (Rastegar et al, 2009).According to Doek (2000), implicit beliefs about intelligence do not affect on performance directly and possibility of its impact is through individual's aim orientation. Doek model assumes that the relationship between implicit beliefs about intelligence and self-efficacy appears through aim orientation. Students with enhanced theory have dominant aim orientation and to achieve these goals they seek to controversial and challengeable learning situations that increase their learning. This indicated the presence of that high self-efficacy in individuals and also increases the feeling of self efficacy in students. Students who accepted inherent theory about intelligence, initially focused on obtaining good performance then by adhering to it began to prove their own competencies to themselves and others. Their orientation to goals is functional. Following functional objectives leads them to spending less effort, easier surrender when faced to difficulties and obstacles, and generally avoid doing things that might be faced with a problem (surface learning strategies) and ultimately leads to less advanced (Dopyart and Marin, 2005), which indicated the presence of low self-efficacy in individuals and also reduces the sense of self efficacy in students. Many of studies consider the relationship among implicit theories of intelligence and goal orientation and self-efficacy. The results of some of them indicate a significant and positive relationship among additive theory of intelligence and mastery goals and high self-efficacy (Khiyabani, 1381; Hejazi, Imam Verdi Abdolvand, 2003).Generally research findings indicate that implicit theories of intelligence can be able to predict self- efficacy.

Methodology
Methodology of present study is a kind of descriptive analysis.
Statistical population and statistical sample
Statistical population of this study is graduate students of Tabriz University that are 2566 people that 302 people are randomly selected among graduate students as sample and based on Morgan's determination sample volume table.
Academic self-efficacy
Academic Self-Efficacy questionnaire (Solberg, O'Brien, Villarreal, Kennel, & Davis1993) consists of 20 items related to different areas of college life (namely fields, roommates and social status) that evaluate individual's understanding about self-efficiency. Respond to items are obtained by using a Likert scale from 1 to 5.Total scores of questionnaires are calculated with total score of 20-item. Total scores range is from 20 to 220 score; High total score reflect high sense of academic self-efficacy. Reliability 3 and internal consistency of instrument was reported 3/93 by using of Alpha method. (D.Waits, 2004). The alpha coefficient in the present study is obtained 0/ 87.
Assessment scale of implicit beliefs about intelligence: Implicit belief of intelligence scale Dweck (1999) consists of 14 items that its 7 items associated with innate intelligence belief, and 7 items related to enhanced intelligence belief. Items are ranked inLikert's5-point scale from 1 (strongly disagree) to 5 (strongly agree).In study of Heslin Latham &Vande Walle (2005)internal consistency for implicit beliefs about intelligence is obtained 94/0. In this study, the alpha coefficient for inherent belief is obtained76/0 and enhanced belief is obtained93/0.

Results

In order to know the average performance of students and the distribution of participants' scores on each of the variables of study, the writer tried to provide the statistical descriptive index (mean, standard deviation) in Table 1.

Table1. Descriptive indicators and correlation between variables research

4	3	2	1	SD	Mean	Variables	
			1	13/30	77/57	Academic self-efficiency	1
		1	[**]0/204	4/05	26/29	Enhanced intellectual beliefs	2
	1	[*]0/161	-0/062	4/21	16/99	Definitive intellectual beliefs	3

Significant at the level[**]

P<0/01

[*]Significant at the P<0/05level

Table 1 indicates a substantial points according to range of questions and obtained mean from students' scores. Enhanced intelligence beliefs have significant and positive relationship with academic self-efficacy and definitive intelligence beliefs have significant and negative relationship with self-efficacy. This means that people with high self-efficacy beliefs, have high self-efficiency and people with definitive intelligence beliefs, have low self-efficacy.

To predict academic self-efficacy through implicit intellectual beliefs multiple regression were used.

Table 2. Summary of multiple regression analysis by simultaneous method to predict academic self-efficacy by implicit intellectual beliefs

Index										Variable
P	F	S.E	ΔR^2	R^2	R	P	t	β	B	
0/002	6/60	13/06	0/03	0/04	0/20					Model 1
						0/001	3/46	0/19	0/52	Enhanced intellectual
						0/599	-0/52	-0/03	0./09	Innate intellectual

Results of table 2 shows that enhanced intellectual beliefs are able to anticipate academic self-efficacy and multiple correlation coefficients (0/20) in level 0/001are significant. Incremental intelligence beliefs with variance 04/0 explain the academic self-efficacy. In other words, people with enhanced intellectual beliefs, have high academic self-efficacy beliefs and innate intellectual beliefs have significant relationship with academic self-efficacy.

Discussion and conclusion

Students constitute a large group of active population of our society. In all countries of the world in general in our country particularly, university issues and students' educational problems of college have taken a wide range and type and variety of these problems have extended such as a sense of low self-efficacy and inappropriate intellectual beliefs of students.

A study was done in relation to the relationship between academic self-efficacy and implicit intellectual theories and present study's results indicated that enhanced intelligence beliefs have significant and positive with academic self-efficacy which means that people with enhanced intelligence beliefs have high self-efficacy and definitive intelligence beliefs have no significant correlation with intellectual beliefs.

Self-efficacy refers to a person's particular beliefs about certain tasks (Betz, 2000). Academic self-efficacy beliefs mainly refer to a person's beliefs about his capability in relation to perform a behavior and academic assignments, achieving the goal and effective coping with stressful environment (quoting Krdmez, 2005).Generally self-efficacy is defined as "people's beliefs about his ability to demonstrate certain behaviors successfully." According to Bandura (1977) self-belief, is an important determinant for achieving behavioral change. While the low self-efficacy can lead to avoidance behavior, high efficacy is driving force for keep and starting behavior. Academic self-efficacy refers to students' beliefs about their ability to successfully accomplish an academic task. So, people with high self-efficacy are more interested in learning activities and make twice their efforts about activities and likely provide effective strategies in front of problems. Research findings show that although the average level of self-efficacy may change over time but their perception of self-efficiency at different ages efficacy rarely remains constant (Sternberg, 1998).Bandura (1997) assigns this matter to different effects that prevent self-belief on people' s belief.

Students who accept the definitive or innate theory of intelligence initially focus on good performance, then by adhering to it, prove their competence to themselves and others and their orientation to goals is functional. Following functional objectives leads them to spending less effort, easier surrender when faced to difficulties and obstacles, and generally avoid doing things that might be faced with a problem (surface learning strategies) and ultimately leads to less advanced (Dopyart and Marin, 2005), which indicated the non presence of correlation between definitive intellectual beliefs and self-efficacy.

A number of studies consider the relationship between implicit theories of intelligence, goal orientation and self-efficacy.The results of some of them indicate a significant and positive relationship among enhanced theory of intelligence and mastery goals and high self-efficacy (Khiyabani, 1381; Hejazi, Imam Verdi Abdolvand, 2003).These findings are consistent with the results of the current research. Also some studies have shown that students with innate theory about intelligence have mainly tendency to functional goals (Doweck and Leggett, 1988; Vermton, Lodoykso, Wermont, 2001; Khiyabani, 2002) and select avoidance goals (Espinato, Pelester, 2003 , Khiyabani, 1381) and don't have high self-efficacy.

Elliott and McGarry Gore (2001) believe that the theory of innate intelligence is a positive predictor of functional goals - tendency, functional - avoidance and mastery - avoidance and a sense of low self-efficacy. Also, theory of enhanced intelligence is a positive predictor of tendency-mastery goals and high self-efficacy. High self-efficiency by effort and stability in performing duties and by using learning strategies are usually correlated with deep process such as elaboration and organization strategies. (Ames and Argher, 1998; Bofard, Boysort, Wezo, Larosh, 1995; Grin, Miler,1996; Mis, Blomenfeled, Hoel, Nolen, Haladina,1990)

High self-efficacy and sustainability efforts usually spent doing duty, using a process of deep such as are correlated.

Low self-efficiency has positive relationship through surface strategies such as parrot learning and memorization (e.g., Mace et al, 1996, Nolen 1998) and with no connection to sustainability (e.g., Miller et al 1996) and have negative relationship with development (e.g., Miller et al 1996).

As a result of consideration of research findings and the current research represents a significant indirect effect of implicit intelligence theory on self-efficacy. Innate theory has positive and significant effect on self- efficacy and progress. Enhanced theory has positive and significant effect on self-efficacy and development. Students who believe that intelligence can be increased, have a high self-efficacy and adopt mastery goals or select mastery trend goals and through deep strategies gain high achievement or select mastery avoidance goals and spend a lot of effort to achieve their goals and progress. As a result, these individuals have a high degree of academic functionality and self-efficacy and definitive intelligence beliefs have no relationship together. These findings are consistent with hypothesis of a cognitive - social approach Doweck (1986) and with research findings of Gralynsky and Astipk (1996) and Rasregar (2006) however, with research results of Dopyart and Marin (2005) who has considered model test, are inconsistent. The current study carried out also approved the majority of previous theories and findings, explain the direct relationship between intelligence beliefs and self-efficacy. A person with appropriate intelligence beliefs, as well has right self-efficacy. People with no appropriate intelligence beliefs, as well has poor social adjustment and this matter in its own turn reduces social support and self-efficacy perception. Because according to Bandura's one of the effective factors on self-efficacy refers to the increasing and decreasing others' support. In other words, people who have the ability to understand and regulate their intelligence beliefs, can also provide more social support network and as well has more self-efficacy perception. In contrast, individuals with lower intelligence beliefs, have no ability to recognize and cope with the feelings of others, which is necessary for effective interpersonal relationships. These people in desperate situations instead of dialogue and negotiation begin to act. It has also been observed in studies that optimism in the areas of intelligence modify people'sself-efficacy. Therefore, by creating reasonable intelligence belief in people, we must increase the area of self-efficiency and consequently progress in individuals.

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