

The Effect of Creative Thinking Training on Cognitive Beliefs and Innate Capability of Learning

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Abstract: The main aim of this study was to find the Effect of creative thinking training on cognitive beliefs and innate capability of learning. An applied study has conducted by experimental method. The sampling process conducted with random method of stage cluster sampling. 60 students of B.A male students of Allameh Amini university were chosen as sample groups randomly to experimental and control groups. The research tools were Schomer's epistemological beliefs questionnaire (1992) and creative thinking training protocol in 10 longs two hours. Covariance test were applied orderly to data description and testing of research hypotheses. The analysis results showed that the instruction of creative thinking enhanced Epistemological beliefs of experimental group more than control group. Also in subscales level of Epistemological beliefs questionnaire the statistical results showed that the instruction increased Epistemological beliefs of students in: innate learning ability.

Keywords: Creative Thinking, Innate Capability, Students.

Introduction

Nowadays, students do not possess appropriate skills after their graduation such as creative thinking, creativity, public relations, incompatible analysis, and group works. Traditional class management methods such as speech would not provide sufficient intellectual stimulation (Geissler et al., 2011). In addition, better academic achievement will be obtained in case creative thinking instructions are provided consistently. It was for the first time that the probe into creativity psychology was provided by Gilford in 1950s through the presentation of paper in America Psychological Association which stimulated the attention of many people toward this aspect of mind development (Hasehmian). Paul and Elder (2008) highlight that the term creative implies three close meaning: creative or capability to create, possessing or presenting imagination as well as artistic creativity, and stimulation of imagination and innovative forces. One can attain deep learning through making use of creative thinking. The integrity of creative skills causes that students are able to experience progression and turn out to be creative after graduation (Awang & Ramly, 2008).

Creative thinking is ranked as led or biased thinking. Thinking is a learning behavior, so it would be feasible to breed up creative people through providing the required conditions. Studies have indicated that one can increase potentials of creative thinking within individuals through training and instructing. These skills are considered as an important component for educational and life-based achievements (Alter, 2009). Cooperative learning and true perception of teacher in relation to teaching method play a great role in changing the mind of students toward creative thinking (Karami et al., 2012). Training creative thinking enables the students to stipulate deeply through making use of these skills and that they employ behaviors and tendencies such as inferences, logics, imagination,

and innovation in all learning contexts of education and life. The most important advantages of training and development pertinent to creative thinking are as follows: developing cooperation among the students (Snyder & Snyder, 2008), increasing the amount of using meta-cognitive strategies so as to enhance cognitive approaches, improving thinking thought in practice and thinking ability in relation to individual and cooperative embarks through generating knowledge (Lakovos, 2011), establishing opportunities for students so that they study what they have already known and to explore new perspectives, to assist students to have more interaction with social, scientific and practical issues (Snyder & Snyder, 2008).

Cognitive bellies are concerned with a set of believing system which involves obtaining, maintaining and processing the knowledge (Manavipor, 2012). Innate capability means the capacity and potential for learning which is genetic and unchangeable. Rapid learning which pertains to the rate of acquiring knowledge and that rapid learning occurs with utmost effort. Also, it includes the capability of knowing everything and beliefs related to the knowledge resource. This means that knowledge is formed by observations and internal inferences as well as individual experiences. Assisted by the growth and development of students' beliefs, teachers can improve enhanced beliefs and motifs within the students for learning. People who enjoyed expanded cognitive beliefs were categorized by high-level inner motivation, self-efficacy, and interest, self-regulatory learning, targeted biased and academic achievement (Braten, 2005).

A review of literature in the field of cognitive beliefs indicates that these beliefs rule all aspects of training and instructing. Cognitive believing systems determine the goal, method, and the quality of progression so that awareness of the type and model of cognitive system can be considered as a predicting factor of human behavior. Cognitive beliefs are related with cognitive capabilities, creative thinking, rapid learning, cognitive approaches and motivational solutions of students. The results of learning and other relevant variables such as learning goals, perceiving and interpreting the information offer self-regulatory suggestions such as perceiving, attitude toward a self-efficacy learner, responsibly and innovation, creativity in learning, perceive-based change and inference as well as thinking (Bendixen et al., 1994). In such situations, learners with simple beliefs are less successful compared to learners who have complex cognitive beliefs (Debra & Calvin, 2008). Also, aspect of cognitive beliefs is formed independently. An individual can have initial and complex beliefs together (Mokhtari et al., 2013). Students who believe that knowledge is proportional and complex and that the capability of acquiring knowledge is innate within the gradual framework, make use of high-level cognitive approaches such as self-regulatory cognition, creative thinking and deep processing which lead to the fact that better results are obtained. Students, who demonstrate that learning capability is innate and it can be enhanced through making efforts, are categorized by better thinking field of high-level cognitive approaches. Enhancing creative thinking can have impact on five components of cognitive beliefs and development of educational purposes.

Materials and Methods

The study follows a pre-test and post-test design. The statistical population comprises of 1102male students educating at Tabriz Allam-e AminiUniversity. Sample size was determined using cluster and randomly.

Instruments: The questionnaire is used to measure five dimensions of cognition involving 63 items in five subscales determining innate capability, knowledge simplicity, rapid learning, knowledge consistency and knowing everything or knowledge resource. Based on normalization of Manavipor (2012) validity of rapid learning, knowledge simplicity and innate knowledge was determined. Ordonez et al. have reported different reliability coefficients in cross-cultural studies. The reliability was obtained as 0.75 using Cronbach alpha coefficient and the reliability among the dimensions was measured as 0.30 to 0.68.

Data analysis method: Findings were analyzed on two levels: descriptive statistics and inferential statistics. Regarding the nature of research variables, the hypotheses were tested using Ancova.

Results

Table 1. Effect of creative thinking training on cognitive beliefs of students.

Changes resource	SS	df	MS	F	Sig.	Eta square
Pre-test	187771.703	1	18771.703	89.487	P<0.001	0.611
Group	22338.802	1	22338.802	106.492	P<0.001	0.651
Error	11956.863	57	209.770	-	-	-
Total	311911	60	-	-	-	-

The results show the effectiveness of creative thinking training on cognitive beliefs. So, null hypothesis is rejected and creative thinking training can increase cognitive beliefs of experimental group. Eta square index shows the effect of creative thinking training on cognitive beliefs.

Table 2. Effect of creative thinking training on innate capability of learning.

Changes resource	SS	df	MS	F	Sig.	Eta square
Innate learning capability	1745.6	1	1745.6	50.429	P<0.001	0.469
Group	990.295	1	990.295	28.609	P<0.001	0.334
Error	35074.38	57	615.34	-	-	-
Total	37810.275	60	-	-	-	-

The test result shows the effect of creative thinking training on innate learning belief. So, null hypothesis is rejected and creative thinking training improves innate learning of experimental group.

Conclusion

Findings of the study showed that creative thinking training led to the improvement of cognitive beliefs of students in experimental group compared to control group. Students with relative knowledge tended to show more interest in interactive discussions and deep evaluation of the concepts. Since this is regarded as one of the important components among the three afore-said variables, so one can expect that relative thinking training has a significant effect on cognitive beliefs as a meta-cognitive structure.

These results are in corresponds with findings of KamaloZarch et al (2012), Akar et al (2011). Findings of the present study confirmed the effect of relative thinking training on simple knowledge belief o students. The results showed that training simple knowledge belief was improved more compared of other aspects of cognition. Regarding the relationship between integrity and correspondence of knowledge and academic achievement, training can have impact on improving natural belief knowledge lack of integrity and its development toward the belief that integrated knowledge is progressing. The results are in line with the ones reported by KamaliZarch et al (2012), Mokhtari et al (2012), Manavipor (2012). The results show that the more complex students' cognition beliefs, the more academic achievement will be. Using creative thinking, students' can increase their academic achievement in relation to obtaining higher scores in test and make deeper understanding of their lessons. Findings of the study showed a positive effect of creative thinking on determinability belief of students. KamaliZarch et al (2012), Mokhtari et al (2012), Manavipor (2012) have reported similar results. These findings show that different instructions have positive effect on determinability belief of knowledge. So, critical thinking training can improve this aspect of cognition.

Conflict of interest

The authors declare no conflict of interest

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