Original Article

Studying the Effect of Community of Inquiry in Philosophy for Children Program on Creativity Improvement among Nursing Students

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Abstract

This study aims at analyzing the effects ofcommunity of inquiry in philosophy for children program on creativity increase among nursing students.(p4c). The research has been done using a Quasi-Experimental method. Statistical population consists all nursing students of Mashhad University of Medical Sciences at the first semester of 2015-2016 school year. The population of control and experimental groups were chosen by means of simple random sampling method. For this aim a simple random sampling was done among nursing students and 30 students were selected as experimental group and 30 students were selected as control group. Then the pre-test was given to the both groups which contained Abedi's creativity questionnaire. After that, the experimental group experienced a treatment pack consisting 27 stories during 10 weeks based on community of inquiry principles. The post-test which embraced creativity questionnaire, then was taken from both groups. The achieved data was analyzed through SPPS software. Covariance analysis approved that philosophy for children program using community of inquiry practices, had a significant effect on increasing the nursing students' creativity.

Key words: Philosophy for children, Community of inquiry, Creativity

INTRODUCTION

In Islamic education and instructions, logic and logical drives have been taken into account comprehensively. Logic is responsible for analyzing and examining input facts and statistics and change them into raw materials for obtaining further new knowledge. In other words, knowledge and science would be beneficial and advantageous if only they obey logic and deduction rules. In Islamic education system, logic and its development located at the center of attention. Different Quran verses, Imams' quotes and Islamic scholars' sayings approve the importance of logic. Several verses of Quran with various contents and themes point to the wisdom and invite human beings to rationality and reasonability. Therefore Islamic pedagogies try to educate people based on logic and reason.

Statement of the Problem

Thinking skills are among the most important skills every education system must care about. For the same reason every teacher must be concerned about their students' deduction and thinking skills development. Teachers must encourage their students to think and find solutions rather than memorizing their lessons by rote. By doing so students would be able to apply their achieved skills in other school tasks and various life situations, since their life is not limited to the school time. Hence, teaching thinking skills must be an inseparable element of every education system. In other words, education systems must teach thinking not the thoughts.

Mathew Lipman program suggests that it is very unfortunate if teachers consider their responsibility to prepare knowledge to be understood by students and make it ready for consumption, rather a responsible teacher should prepare a model of argumentative thinking for their students and persuade students to think during

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class tasks (Ghaedi, 1383). The concept of community of inquiries was first introduced by C.S. Peirce. Peirce restricted the concept to some educational activities which was in accordance with logical empiricism to some extent. Lipman defined community of inquiry as a group of scholar and creative people who try to find inventive and innovative solutions for the past problems. Lipman argues that classroom is a sort of community of inquiry where lessons subjects are given in a form of philosophical and argumentative stories (ibid).

Students would develop hypotheses by following procedures and consequences and then they would analyze and criticize them. Based on community of inquiry practices for analyzing the developed hypothesis some elements are of significant importance, such as coherency of hypotheses, consistency of variants, clarity and uncomplicatedness, reasonability, appropriate reasons and logical alternatives, considering the connection and sequence of events, accepting criticisms and correcting the criterions if needed. Philip Kam has explained comprehensively about these elements and principles in his book (Ghaedi, 1387).

Community of inquiry is the key element in philosophy for children program and provides a framework in which learned materials and questions make a way into the daily life of its participants. It needs mentioning that community is differ from society and what is needed in this program is a community (a group of individuals) (Ghaedi, 1384). The main point is that the community needs some groups wherein people interact with each other while learning and express their views about proposed questions. Finally they come up with some ideas, share and defend their beliefs, and challenge contradictory opinions of others. Accordingly, the main goal of community of inquiries is to change students into qualified researchers and investigators. In order to achieve this aim there must be a research program based on which class students divide into some groups and continuously are engaged in inquiry. The intended community is a research based community inside which not just creativity and thinking grows, but also ethical principles would develop; such as tolerance, patience, forbearance and respecting other members of groups. Applying this method in classroom leads to self-awareness, creativity and reasoning among students.

The Importance of Research Problem

Creative thinking has caught the attention of experts in nursing and midwifery fields and health-care organizations, particularly in clinical domains of nursing. As nursing moves from occupation toward profession, the necessity of cognitive and interpersonal skills has been recognized and has inspired nurses to move beyond responsibility to reach skill-based knowledge. By gradual progression of clinical nursing prospect, nurses have gained more independence and encountered with demands of creative thinking for decision making and problem solving situations. The most important nursing goal is making decisions to take care of the patients properly. In order to achieve this goal, nursing trainings has put an emphasis on creative and critical thinking. According to the researches done in this field it's recommended to teach creative and critical thinking to nursing students so that they would be able to provide more efficient clinical services and make more rational decisions (Martine, 2002).

At the same time as science and technology are advancing, education of nursing needs more advanced skills to help nurses for solving problems more efficiently by means of critical thinking. Since a different viewpoint leads to different performance, if one wants to act creatively, one must think creatively (Jackson, 2005). Today nursing students, tomorrow nursing practitioners; they must distinguish creative managers' personalities and strategies for developing creativity. When one is aware of their creativity level, they would be able to get use of their cognitive, reasoning and mental abilities to offer more efficient services in medical centers. Through developing and encouraging creativity, research spirit, critical thinking and accepting criticism among the medical center staff we would achieve to a more sufficient center. A creative manager has the ability to solve problems creatively and critically, which means to define the problem properly and clarifying its structure (Step, 2003). On the other hand, some factors are considered as barriers of critical solving problem such as fear of failure or criticism, lack of self-confidence, lack of concentration, and conformity with the crowd tending (Sharafzade, 2009). Removing these barriers in nursing training system would lead to decision making skill in clinical situations and creativity development in nursing students and would make them well-prepared for clinic environment and would help them in performing their role. Therefore, teaching creative decision making skill during apprenticeship period especially in Nursing Management field becomes important (Step, 2003).

Terms and Variables Definition
Philosophy for children
Philosophy for children, sometimes abbreviated as P4C, is a pedagogical program which was founded in 1970. This movement was started as an experimental learning method and in opposition to the traditional standard educational systems (Vancieleghem, 2010; 1). Lipman (1991) believes that by philosophy at schools we do not mean the academic and traditional philosophy taught at universities; but our intended philosophy is redesigned and restructured, a subject that is acceptable and available for children (Ghaedi, 1383). This program has various methods and principles.

Creativity

Creativity is the process of finding the problems, information gap, lost components, proposing irrelevant submissions, making assumptions, making some hypothesis, evaluating and analyzing the hypothesis, assessing the hypothesis for a second time, and finally proposing the results (Steenberg, 1978; 47).

Introducing the P4C program

Philosophy for children program was introduced in the second half of 20th century by Lipman. Lipman founded the "Institute for the Advancement of Philosophy for Children" at Montclair State University. This kind of philosophy is practical and aims at teaching them decision making skills. As a founder of this movement, Lipman defines P4C as a practical philosophy, not a program in which different philosophers viewpoints be applied for clarifying and solving non-philosophical problems, but a program that makes children and student think and do mental activities (Fisher, 1388; 62).

In primary program of P4C intended by Lipman, philosophy is equal to mental activities. He attempted to design a process of activities to develop thinking in childhood by means of stories. Lipman (1993) intended to develop thinking via teaching thinking skills.

Today there's a significant difference between "teaching about thinking" and "teaching for thinking". Philosophy for children puts an emphasis on teaching for thinking methods, keeping in mind that thinking might be about any sort of problems and issues even thinking about thinking itself. But it is proved that teaching about thinking does not have great value, and just will teach students some facts about oceans, butterflies and something like that, but it wouldn't guarantee development of thinking process abilities of students (Omy & Gharamaleky, 1384).

Philosophy for children program aims at teaching thinking skills and was developed by Lipman and Sharp in 1980s. The program has reached a global reputation and has been applied in more than 50 countries all over the world (Lyle & Williams, 2012; 1-2).

The framework of philosophy for children and teenagers program was gradually developed at Montclair State University. Progressively some uniform books (philosophical stories for children) were provided. A consistent educational design was planned based on which class students with their teacher sit in circle and start discussing collaboratively (Naji, 1382; pp. 26-30).

As Lipman confirms, philosophy teaching programs have been heavily influenced by John Dewey and Vygotsky ideas who emphasized the necessity of teaching thinking skills and avoidance of mere memorizing of textbooks (Figure 1). That is not enough for children to learn by heart what is said to them and then recall the memorized materials, but they must experience, analyze and question the given materials. The program contains diverse practice which will open up new horizons for learners and will teach them how to think. Philosophy for children seeks to teach learners philosophical inquiry. This kind of teaching is different from telling some parables or tales whose aim is instilling morals into the learners (Naji, 1387). This program persuade people to think and decide for their lives and don't let others think and decide instead of them (Naji, 1382; pp.26-30).

The purposes of Philosophy for Children Program

Improving creative thinking

One of the education serious challenges is preparing children for entering a world that is rapidly changing. That's why teaching creative thinking is so necessary and important. Creative thinking is important not only for confronting future issues, but also for fulfilling present needs. A considerable disadvantage of standard traditional education is that for increasing children thinking skills it was expected their imagination and fancies must be avoided. But philosophy for children program does not accept such an assumption, because we can accomplish rational thinking by doing artistic and creative activities, too. In addition, creativity might be increased by improving reasoning ability. Philosophy for children program benefits from activities such as role playing, puppets performance, various games and plays, and cooperation in several artistic activities in order to help children in expressing their experiences (Safaee Moghadam, 1377).

Improving critical thinking

For having open-minded children we must be concerned about their argumentative and thinking abilities. Learning critical thinking means that people learn what kind of questions they should ask, when they should ask questions and how. Furthermore they should learn what method of deduction they should use, when they should make deductions and how. Lipman believes that P4C program would improve critical thinking properly. McPeck, one of critical thinking movement philosophers, approves that philosophy for children program is an advantageous tool for developing children mental skills (ibid).

Strengthening moral values

Appreciating moral values and having a code of ethics requires a philosophical mind and having discussion about ethics' essence and issues. Lipman seeks philosophical approach towards ethics by means of ethical inquiry. He believes that philosophy for children program is the

only program that guarantees strengthening of moral values in children by teaching philosophy via discussion and argumentation. In P4C program child is involved in ethical inquiry which requires critical and creative thinking. Consequently, one of the main purposes of this program is strengthening code of ethics among children (ibid).

Teaching artistic values

Teaching arts encompasses employing basic philosophical concepts. Besides, fully comprehending the artistic values requires distinguishing the essence of these values. Accordingly, having some philosophical discussions about artistic values and what is called philosophical aesthetics must be a definite component of teaching arts. For that reason, Hagaman (1990a) believes philosophy for children program is applicable in art teaching and its application would lead to fully comprehension of artistic values in children. In his other paper, Hagaman (1990b) relies on cooperative learning method and asserts that Lipman program as an educational model which is based on effective cooperation and interactive discussions might be beneficial in art teaching field and might increase learning arts (Safaee Moghadam, 1377).

Thinking Concept

Thinking procedure consists of several mental activities divided into two groups: cognitive and metacognitive activities. Cognitive activities consist of skills and mental actions which seek meaning and creating meaning. Metacognitive activities are responsible for controlling and guiding skills and the created meanings. John Dewey believes thinking is an activity wherein existing situation and reality lead to producing or confirming further realities or a procedure during which future beliefs and opinions are founded based on past beliefs (Shabani, 1382). Various viewpoints are available about thinking, that's why various categorizations are available in this subject, too. One of these views defined thinking as a reality with numerous dimensions and aspects; a reality that manifested in different ways and has no single existence. The advocates of this viewpoint classify thinking into different components like: rational thinking, creative thinking, and critical thinking, practical thinking and free association (Badry Gargary & Fathy Azar, 1386).

Philosophical thinking has its own exceptional features and so it differs from other kind of thinking such as scientific thinking. One of the most significant qualities of philosophical thinking is historical dependency. In other word, philosophical thinking entails critical examination and investigation, and background of philosophical knowledge. For the same reason there is a vital and close relation between philosophy and history of it, as

if philosophy history ensures the survival of philosophy (Naji, 1383).

Creativity Components

When we talk about creativity components, the factors that make up creativity are intended. Creativity is made up of elements and rudiments that interact with each other. Creativity components are classified into three groups of cognitive, personal and motivational. All these three groups actively interact with each other. For instance when teachers want to increase their students creativity, they shouldn't stick to one component (like cognitive components) and let alone the others, but they must be concerned about all components properly, comprehensively and systematically (Zare & Foroozande, 1387). In general two approaches have analyzed, scrutinized and introduced basic components of creativity: cognitive approach, and social approach.

Literature Review

In his thesis "The Impact of the Community of Inquiry in Philosophy for Children Program on Deduction skills of Third Grade Boy Students of Ahvaz Public Exemplary School", Marashi (1386) concluded that applying community of inquiry in classroom might have positive effects on students' deduction skills. The results of this research is in accordance with other researches done outside of Iran.

Trickey and Topping(2004) in theirpaper, *philosophy for children a systematic Review*, reviewed ten researches done since 1975 up to 2002 and mentioned positive effects of P4C program on issues such as reading, creative thinking, deduction skill, self-esteem, cognitive abilities and learning mathematics.

Another research was done in India by Mangena (2005). The students of seventh grade participated in this research whose purpose was studying the impact of philosophy for children program on social and moral deduction skills of students. The results of applying P4C program as represented in this paper reflect improvement in social, moral and cognitive skills of students. The students participated in this study were able to utilize learned materials and skills in their daily life.

Statistical Population and Measuring Instruments of Research

Statistical population consists all nursing students of Mashhad University of Medical Sciences at the first semester of 2015-2016 school year. In general 340 students participated in this paper.

Abedi creativity questionnaire is a well-known creativity assessment questionnaire that is a paper-and-pencil test. Primary creativity test was performed by Abedi (1363)

and 650 third grade students of the secondary schools in Tehran participated in the test. Correlation coefficient between four sections of creativity assessment tests including fluency, flexibility, originality, and elaboration subcomponents with school subjects at 0.01 level indicated a significant relation. The correlation coefficient was at most 0.22 (between mathematics and originality) and at least 0.05 (between mathematics and flexibility). There was a significant relationship between correlation coefficient of Abedi creativity test and other creativity tests at 0.01 level. The correlation coefficient was at most 0.55 (between fluency section of Abedi test and fluency section of Weston University test) and at least 0.20 (between flexibility section of University test and originality section of creativity test). The results were analyzed and it was concluded that the creativity test is acceptably valid (Jahani, 1386).

In order to estimate the reliability of research, Cronbach's alpha and internal consistency methods were applied. The reported coefficients of the test are as follow: 0.75 for fluency section of the test, 0.67 for originality section of the test, 0.61 for flexibility section of the test and 0.61 for elaboration section of the test. Principal components analysis (PCA) method was utilized for estimating data coordination in two sections. The results reflects strong coefficient between all four sections of the test and the first latent variable (0.55 up to 0.85).

Describing Creativity Level among Research Participants

Since creativity total score is assessable, descriptive indices of this variable are reported subsequently. Creativity variable was obtained from added scores of questionnaire all questions (Table 1).

Generally speaking, creativity level of participants who learnt philosophy for children program had increased up to 13.67 percent. The findings are presented in Table 2.

The linear and bar charts represent creativity scores of pre-test and post-test related to experiment and control groups. The drawn charts are in accordance with the paper results (Tables 3 and 4).

Research Hypothesis and Deductions

In order to study the effectiveness of community inquiry in philosophy for children program on creativity increase among nursing students, single variant and multi-variant analysis of covariance (ANCOVA) was employed. Hence, for each hypothesis first the assumptions of covariance analysis were examined and then the results were presented.

The hypothesis of covarianceanalysis are proposed as below:

H_0: There is no significant difference between scores of participated groups, before and after the intervention of P4C program.

H_1: There is a significant difference between scores of participated groups, before and after the intervention of P4C program.

It can be stated that for confirming the effectiveness of P4C program and its method of community of inquiry, the first hypothesis (H_0) must be rejected and analysis of covariance must get less than 5 percent error.

The researchers have examined and evaluated the assumptions of covariance analysis by means of different tests. Firstly, a normality test was applied to determine if the paper data distribution is normal and well-modelled during the experiment and between research groups. In this test if the significant level be more than error 0.05 (or at least more than error 0.01), the normality of data distribution will be confirmed.

The second utilized test is levene's test. The levene's test evaluates the equality of a variable variances calculated for control and experimental groups. As it was mentioned

Table 1: Inspected variables in a conceptual model and applied method for analyzing them

Group	Pre-test	Interposition Sort	Post-test
Experiment	Abedi creativity questionnaire	Using philosophical swtories (about Ontology, Epistemology, and Axiology)	Abedi creativity questionnaire
Control	Abedi creativity questionnaire	----	Abedi creativity questionnaire

Table 2: Descriptive indices of creativity variable

Variable	Group	Kind of test	Participants number	Minimum score	Maximum score	Mean of scores	Standard deviation	Change percent
Creativity	Experiment	Pre-test	30	97.00	164.00	134.800	18.35737	13.68
		Post-test	30	116.00	168.00	153.2333	12.07072	
	Control	Pre-test	30	100.00	140.00	123.4667	10.08151	−1.70
		Post-test	30	111.00	133.00	121.3667	7.58166	

Table 3: Results of analysis of covariance

Variable	Group	Test	Normality		Equality of slopes regression		Equality of error variance	
			Statistic	Significance	Statistic	Significance	Statistic	Significance
Fluency	Experimental	Pre-test	0.822	0.509	0.012	0.912	0.001	0.971
		Post-test	0.944	0.336				
	Control	Pre-test	0.788	0.563				
		Post-test	1.176	0.126				
Elaboration	Experimental	Pre-test	1.180	0.123	0.072	0.789	1.821	0.182
		Post-test	0.813	0.523				
	Control	Pre-test	1.015	0.255				
		Post-test	1.656	100.0				
Originality	Experimental	Pre-test	1.016	0.254	1.234	0.271	2.371	0.129
		Post-test	0.677	0.750				
	Control	Pre-test	1.060	0.212				
		Post-test	0.993	0.278				
Flexibility	Experimental	Pre-test	0.772	0.590	0.976	0.328	0.122	0.728
		Post-test	1.063	0.208				
	Control	Pre-test	1.041	0.228				
		Post-test	1.231	0.096				

Table 4: Results of Multi-variant analysis of covariance

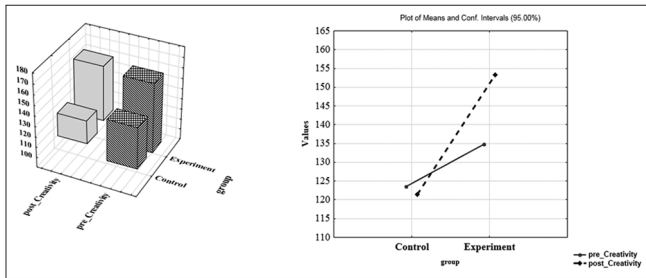| Variable	The results of analysis of covariance				
	Wilks' Lambda value	Statistic value	Degree of freedom	Significance	Effect size Eta squared
Fluency Elaboration Originality Flexibility	0.265	35.287	5 and 4	0.000	0.73

Figure 1: Creativity scores in research groups

about the previous test, if the significant level be more than error 0.05 (or at least more than error 0.01), the equality of variances will be confirmed.

The third test is equality of regression slopes test, which is highly important. Once more, if the significant level be more than error 0.05 (or at least more than error 0.01), the equality of regression slopes will be confirmed.

Finally, the findings of covariance analysis would be presented. In analysis of covariance if the significant level be less than error 0.05, it will be concluded that research variables scores have changed after performing philosophy for children program (Table 3). This means that the program was effective and successful.

Examining the Effectiveness of Community of Inquiry in Philosophy for Children Program on Creativity Growth

This research main purpose was to examine the effects of philosophy for children program on creativity growth among nursing students. This issue has been scrutinized through multi-variant and single-variant analysis of covariance method.

The results of multi-variant covariance analysis test reflects that significance level is equal to 0.000 which is less than error 0.05. Hence, it can be concluded that philosophy for children program and its method of community of inquiry had a significant effect (up to 73 percent) on four subcomponents of the creativity variable. With 95 percent degree of certainty, it can be claimed that philosophy for children program with an effect size of 73 percent, has a significant impact on creativity growth (Table 4).

RESULTS AND CONCLUSION

The community of inquiry in philosophy teaching program has a significant effect on creativity and creative thinking improvement of nursing students. The results of multi-variant covariance analysis test reflects that significance level is equal to 0.000 which is less than error 0.05. With 95 percent degree of certainty, it can be claimed that philosophy for children program with an effect size of 73 percent, has a significant impact on creativity growth.

According to the results of normality test all significant levels are more than error 0.05 (or at least error 0.01). Therefore, it is approved that data has distributed normally in research groups.

According to the results of equality of slopes regression, significant level of all research variables are more than error 0.05. Therefore, the equality of slopes regression is approved.

According to the findings, significant levels of error variance equality tests are more than error 0.05. This fact proves that at the beginning of the experiment the research groups were equal.

In a similar research, Naderi (1391) studied the effects of philosophy for children program on creativity growth of boy students. The selected participated students were in first grade of high school in 14th district of Tehran. He performed pre-test and post-test design and utilized independent variable and applied Abedi's creativity test. He concluded that philosophy for children program is a valid and reliable program and his research findings revealed that this program has a significant effect on creativity development and its subcomponents comprising flexibility, originality, fluency and elaboration.

In another research, Rostami (1390) compared the effects of Philip Kam and Morteza Khosronejad philosophical stories on children creativity. For this paper he worked by 5-6 years old boys in Tehran kindergartens. He concluded that community of inquiry method had a significant impact on children creativity.

Another research was done by Tajalinia, Shariatmadari and Seif-Naraghi (1391). The researchers studied the impact of applying philosophy for children program on students'

creativity and their participants were boy students in first grade of high schools in 14th district of Tehran. Based on their findings, philosophy for children program is a valid and reliable program and it has a significant effect on creativity development and its subcomponents including flexibility, originality, fluency and elaboration. These findings are in accordance with other researches done in this field, such as Jahani (1386), Naji and Ghazinejad (1386).

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