

## A Study of Effect of Preschool Course on the Growth of Creativity of the Elementary School First Level Students of Tonekabon Township in the Academic Year of 2011-2012 has been Carried Out

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### ABSTRACT

Under topic of "A study of preschool course on the growth of creativity of the first elementary school level students of Tonekabon Township in the academic year of 2011-2012", this researcher has been carried out.

Statistical universe of this research consisted of the entire elementary school first level children of Tonekabon Township who were engaging in education out of which 160 individuals based on separation of gender (80 individuals from test group and 80 individuals from control group) were selected from 8 schools of 4 urban, central, rural and boundary regions by multi-step cluster sampling. Tool of this research was form B of the Torrance's pictorial creativity test executed on them in two pretest and posttest steps.

By exploitation from descriptive and perceptive statistics and usage of independent two-group t method, this research was studied, and comparison of averages showed a significant difference up to a 99% assurance level in all research's hypotheses; that is, with 99% of assurance and in 1% alpha level, it can be said that:

Rate of growth of creativity of the elementary school first level children of Tonekabon township in academic year of 2011-2012 who have passed the preschool course compared to those who have not passed this course is higher which is significant statistically, and it can be said as following:

Gone-to-preschool students compared to the students who have not passed this course possess a noticeable difference in the components of creativity (flexibility, extension, genuineness and fluency).

**KEY WORDS:** creativity, fluency, innovation (genuineness), flexibility, extension, elementary course.

### INTRODUCTION

Today complicate life is becoming new/ modernized every moment, and creativity and innovation is continuation of active life.

In order to create joy and activeness in the life, human being needs creativity and innovation to satisfy his/ her own motivation of diversity-seeking. In order to survive, escape from death and stagnate/ stabilize, human society needs change, transformation and innovation.

Today, motto of "Destruction awaits you unless you are creative and innovative" places in front of every body. (Mahdavi-pour, 2009)

Preschool education is the first step of formal education which has it's own objectives, plans methods and specific tools and is an important basis/ level for other courses of general education, and preschool plans must be designed considering their needs and talents.

Since other societies have realized the significance of preschool planning as the basis of each sort of reformation, our educational society, therefore must take measures to reassess and plan basically in this field while considering these ages to be important and replaces the new effective educational methods with past traditional and less effective methods. (Hossaini, 2008)

Childhood years are of a sensitive and determinate role in the human life. Paying attention to these years/ ages is up to a place where the childhood years have been often identified as the most prominent step in the compilation of human personality on the behalf of the psychologists and knowledgeable and specialist authorities of education. And, purpose of education is to create desirable changes in behavior and, sometimes, the changes considered by trainers and society are contrary to

creativity of learner. Other important factors which are important in this research and can be led to significance of the research are as following cases:

A. All children have a talent for creativity, although they may be different from viewpoint of rate of possession of the creativity power.

B. Creativity doesn't take form in the vacuum, and the more the knowledge and experience of children, the more qualitative would be their basis and foundation of their creative efforts.

C. Provoking and persuading environment can have a more effective share in the improvement of children's creativity. (Mofidi, 2008)

If we are able to direct the children in the creative solution of problems and higher levels of thinking by use of appropriate models, this ability can be continued greatly until the next years of education. Also, the specialists believe that creativity of the next generation in the solution of our future difficulties will be vital; therefore, nurture and education of the children's creativity must be dealt with in the early years of school and since preschool (Torrance, 1996). Creativity is ability of creation of the ideas or artifacts which are: 1) new 2) wonderful and 3) valuable (Dorin and Korb, 2009).

Creativity is the designed imaginary activities which its result is creation of new and valuable products. (Loveless et al., 2011)

The studies carried out by Ghasemi and Jahanifar (2009) studied the relationship of dual gender role with creativity and educational performance and reached this conclusion that the girls and boys, with masculine gender role, had the maximum scores of creativity and the individuals, with feminine role, were of the minimum scores, and there exists a significant relationship between creativity scores and educational performance.

In a research conducted by Maghsoudi in 2008 under topic of a study of rate of effectiveness of method of teaching the problem solving on rate of creativity of the preschool children, the obtained result suggests that usage of method of teaching the problem solving can be effective on the increase of rate of creativity of the preschool course children.

And, in a research performed by Saif (1996) in the Tarbiat-E-Modarres University, a study of effect of painting teaching through open method on the education/ nurture of creativity in 10-year-old children was dealt with. In the research, the main problem was that: Does painting teaching through open methods influence on the nurture/ education of children's creativity? In this research, four hypotheses were presented which, after studying, three hypotheses were confirmed and one hypothesis was denied. Also, he has dealt with studying of effect of painting through open method and thematic and complementary selection on the increase of creativity of preschool children of Tabas town: Which results of the research showed that painting teaching through open method and thematic selection is a useful method for preschool children.

In a research, Karashki(2003) dealt with studying of three factors of creativity, intelligence and moral growth in two groups of primary school first- year children (a group of children who have passed the preschool and preparatory courses before entering into elementary school and a group of them who have not passed), and in response to this question that whether preschool teachings can be led to acceleration of process of intelligential growth, creativity and moral growth in children or not?

On the basis of obtained results, the desired hypotheses were confirmed.

In his findings, Perlz (2006) expresses that a high relationship exists between achievement of reading literacy of student and educational activities of reading literacy before the school. (Karimi, 2006)

In a research carried out by Suresh (2006) in order to survey effect of plan of nurturing the creativity on the preschool creativity, it was shown that plan of teaching the creativity increased creativity of the students significantly and there was a correlation between test scores. In the group of 3 to 6 years old, children's creativity can be increased by appropriate educational plan and qualified teachers. Since success of education/ nurture of children's creativity depends on teachers, preschool plans and teacher education must be taken into consideration greatly as well.

With aim of detection of features, including divergence thinking, fluency, flexibility and innovation in the preschool children, it was shown in the Vita's research (2010) that verbal fluency is higher than pictorial fluency significantly and suggests that this feature is affected by growth factors, and the next researches can study existence a significant relationship between verbal scores in this age and higher ages. The methods used in this research had been designed for children in order to provide possibility of the fluent, flexible and innovative responses.

In a research, Girtan (2007) dealt with studying of the preschool creative educational plans to survey it's effect on the creativity of children.

Research tool was Torrance test and the educational plan led to fluency and flexibility of the children. In their own research under topic of a study of relationship between free activities and creativity

in the preschool children, Linda and Pinkel (2006) reached this conclusion that the activities of this sort increase the children's creativity noticeably and are effective on all dimensions of creativity. Also, they showed that the girls have had a noticeable increase in dimension of fluency and extension and the boys have had a noticeable increase in dimension of innovation, but they have been grown, up to a limit, at equal rate in dimension of flexibility.

Considering above materials and, also, significant role of preschool course in the growth of creativity, this research has been conducted with aim of "A study of effect of preschool course on the growth of creativity of the elementary school first level students of 2011-2012." And, this research has intended to study the following hypothesis:

### **Main hypothesis**

Rate of growth of creativity in the experienced students of the preschool teaching is more than the inexperienced students.

### **Auxiliary hypotheses**

1. Rate of growth of creativity (from viewpoint of fluency component) in the children who have passed preschool course compared to those who have not passed that is higher.
2. Rate of growth of creativity (from viewpoint of flexibility) in the children who have passed preschool course compared to those who have not passed this course is higher.
3. Rate of growth of creativity (from viewpoint of genuineness) in the children who have passed preschool course compared to those who have not passed this course is higher.
4. Rate of growth of creativity (from viewpoint of extension) in the children who have passed preschool course compared to those who have not passed this course is higher.

## **RESEARCH METHOD/ METHODOLOGY**

This research carries out by empirical method and using two test and control groups which, in the test group, it is performed through execution of pretest and accomplishment of independent variable as well as execution of posttest and comparison of results with control group which independent variable doesn't execution for two groups. diagram of the pretest- posttest researching plan with control group is as follows:

Test	RT1	X	T2
Control	RT1	-	T2

Statistical universe is the entire first level students of elementary schools of Tonekabon Township, numbering 160 individuals. This research was accomplished by multi-step clustering sampling method on 160 individuals (80 individuals from test group and 80 individuals from control group) who were selected out of eight elementary schools- four girls schools and four boys schools-and, in each class tool of this research includes Torrance creative thinking test of the pictorial form B. The most principal motivation for selection of Torrance creativity test was that a test is to be used which is well- known both from viewpoint of efficiency and from viewpoint of having an appropriate validity and reliability to carry out the research. For this reason, the most appropriate test, well known with respect to validity, reliability and, more important, being independent on culture, was identified to be Torrance creative thinking. This test has reliability coefficient of 80 and 90% and shows the validity coefficient of prediction being equal to 63%. (Hossaini, 2002)

If pictorial form B is selected, guidance and direction of execution and score giving allocating to pictorial form B is required.

Assessment of test validity was obtained through consultation with thesis advisor, consulting advisor and psychology professors. It is required to mention that because Torrance creativity not normalized become flexible [Soften] in Iran, this research was carried out by consultation and guidance of professors of psychology group and it was tried that questions are understand able for children on which the test has been executed, and accuracy of reliability of test was assessed considering volume of statistical sample and standardization of Torrance's test. In this research, total number of the subjects was 160 individuals who were placed in two 80- individual groups. Each one of two groups included 40 girls and 40 boys. The first group was called test group and the second group was called witness group.

For coordination and receipt of permit of the research plan, the research, through taking letter of introduction from university, referred to organization of Ministry of Education of Mazandaran and Research Center of education and upbringing of the province and obtained the permission of presence in the schools through related offices and responsible authorities. Out of the elementary level schools of

Tonekabon Township, 8 elementary schools from amongst total elementary schools were selected randomly and the first-class students who had passed pre-school course were selected as test group and, at the same proportion, the students who had not passed preschool course were selected as the witness group. In addition, in the beginning of academic year of 2011, the Torrance pictorial form B as the pretest was executed on the previous samples, and, in the middle of January, 2011, the same test in the mould of post test was executed on the previous samples.

In order to test the complied hypotheses, analysis of data was performance according to the executive method in two sections as follows:

In order to analyze hypotheses from first to fifth ones, independent two- group T method has been used.

1. In descriptive form
2. In perceptive method.

Descriptive statistical methods include calculation of frequency, diagram, average standard deviation, and perceptive statistical methods include independent two-group T test. Mean while, analysis of data has been conducted using SPSS software.

### Findings of research

After extraction of the scores of creativity in the components of genuineness, flexibility, fluency and extension of all students, average scores were calculated which hypotheses of research, descriptive table and perceptive table of each one of components along with analysis of result of each hypothesis are presented/ appeared as following, respectively:

### The main hypothesis of the research

Rate of growth of creativity of the students having preschool experience is higher than the students lacking this experience.

**Table 1: Descriptive statistics of creativity based on separation of group**

Statistic	Group	Average	Standard deviation	Number of individuals
Not gone-to-preschool students		5.20	6.83	80
Gone-to-preschool students		23.43	10.26	80

In order to obtain creativity score, variance score, namely difference of pretest and post test has been used. On the basis of above table (1), average of creativity score (variance score) in the students who have not gone to preschool (5.20) has been accompanied by standard deviation of (6.83). Average of the creativity score (variance score) in the group who have passed this course (23.43) has been accompanied by standard deviation of (10.26). Number of individuals in each one of groups has been 80 individuals and 160 ones totally.

**Table 2: Results of independent T test**

Statistic	Group	Average	Difference of two average	Significance level	Freedom degree
Not gone-to-preschool students		5.20	-18.22	0.000	158
Gone-to-preschool students		23.43	-13.22		

One the basis of table (2), rate of observed t is equal to -13.22. Quality of critical t with freedom degree (158) in the significance level of  $P < 0.01$  is equal to 2.57 because the observed t is higher than the critical quantity. Supposition of zero is denied; that is, it can be said with assurance of 99% in this research that:

Rate of growth of creativity of the gone- to-preschool students is higher than students who have not passed this course significantly. ( $t = -13.22$ ,  $P < 0.01$ )

### Auxiliary hypothesis: Special

#### The first hypothesis

Rate of growth of creativity (component of genuineness) in the students who have passed the preschool course compared to those who have not passed this course is higher.

**Table3: Descriptive statistics of component of genuineness based on separation of group**

Statistic	Group	Average	Standard deviation	Number of individuals
Not gone-to-preschool students		91%	1.89	80
Gone-to-preschool students		5.77	3.58	80

Table (3) suggests that average of creativity (from viewpoint of genuineness) is 91% in the students who have not passed preschool course and is 5.77 in the students who have passed this course. Also, rate of dispersion of scores based on the standard deviation in the first group is 1.89 and in the second group is 3.58. The next table shows result of t test.

**Table 4: Result of t test related to the component of genuineness**

Statistic	Group	Average	Difference of two averages	Significance level	Freedom degree
Not gone-to-preschool students		91%	-4.86	-10.72	0.000
Gone-to-preschool students		5.77			158

On the basis of table (4), rate of observed t is equal to -10.42. Also, quantity of the critical t with freedom degree of 178 in the significance level of ( $P \leq 0.01$ ) is equal to 2.57. Because observed t is greater than critical quantity, supposition of zero is denied; that is, it can be said, with assurance of 99%, in this research that: Rate of growth of creativity (from viewpoint of genuineness) in the gone-to-preschool students compared to not gone-to-preschool students is higher from viewpoint of statistics significantly. ( $t = 10.72$ ,  $P \leq 0.01$ )

### The second hypothesis

Rate of growth of creativity (component of flexibility) in the students who have passed preschool course compared to those who have not passed this course is higher.

**Table 5: Descriptive statistics of component of flexibility based on separation of group**

Statistic	Group	Average	Standard deviation	Number of individuals
Not gone-to-preschool students		92%	2.18	80
Gone-to-preschool students		2.96	2.61	80

On the basis of table (5), average of creativity (from viewpoint of flexibility) in the students who have not passed preschool course is 92% and those who have passed this course is 2.96%. On the basis of standard deviation, rate of dispersion of scores in the first group is 2.18 and in the second group is 2.61. Next table shows result of t test.

**Table 6: Result of t test related to component of the flexibility**

Statistic	Group	Average	Difference of two average	Significance level	Freedom degree
Not gone-to-preschool students		92%	-2.03	-5.35	0.000
Gone-to-preschool students		2.96			158

On the basis of table (6), rate of observed t is equal to (-5.35). Since the observed quantity is greater than critical quantity, supposition of zero is to be denied, that is, it can be said, with assurance of 99%, in this research that:

Rate of growth of creativity (from viewpoint of component of flexibility) in the gone-to-preschool students is higher than that in the not gone-to-preschool children significantly. ( $t = 5.35$ ,  $P \leq 0.01$ )

### The third hypothesis

Rate of growth of creativity (component of fluency) in the students who have passed preschool course compared to those who have not passed this course is higher.

**Table 7**

Statistic	Group	Average	Standard deviation	Number of individuals
Not gone-to-preschool students		71%	2.44	80
Gone-to-preschool students		2.56	2.33	80

Table (7) suggests that average of creativity's growth (from viewpoint of fluency) in the not gone-to-preschool students, (71%), is with standard deviation of (2.44), and average of this component in the second group, namely gone-to-preschool students is (2.56) and it's standard deviation is (2.33). The next table shows result of t test.

**Table 8**

Statistic	Group	Average	Difference of two average	Significance level	Freedom degree	
Not gone-to-preschool students		71%	-1.85	-4.89	0.000	158
Gone-to-preschool students		2.56				

Quantity of *t* observed in table (8) is equal to -4.89 and is higher than critical quantity; then, supposition of zero is denied, namely it can be concluded, with assurance of 99%, in such a way in this research: Rate of growth of creativity (from viewpoint of fluency) in the students who have passed preschool course is higher than those who have not passed preschool course is higher than those have not passed this course significantly. ( $t = -4.89$ ,  $P \leq 0.01$ )

#### The fourth hypothesis

Rate of growth of creativity (component of extension) in the children who are taught by the teachers educated regarding creativity compared to the children whose teachers have not been educated is higher.

**Table 9: Descriptive statistics of component of extension based on separation of group**

Statistic	Group	Average	Standard deviation	Number of individuals
Not gone-to-preschool students		2.65	3.97	80
Gone-to-preschool students		12.13	5.51	80

On the basis of table (4-9), average of creativity (from viewpoint of component of extension) in the first group- not gone-to-preschool students is 2.65 and in the second group-gone-to-preschool student- is 12.13. Also, rate of dispersion of the scores based on standard deviation in the first group is 3.97 and in the second group is 5.51. Next table shows result of *t* test.

**Table 10: Result of *t* test related to component of extension**

Statistic	Group	Average	Difference of two average	Significance level	Freedom degree	
Not gone-to-preschool students		2.65	-9.48	-12.47	0.000	15.
Gone-to-preschool students		12.13				

According to results of table 10, rate of observed *t* is equal to -12.47 which is greater than critical quantity; therefore, supposition of zero is denied; namely, it can be said, with assurance of 99%, in this research tat: Rate of growth of creativity (from viewpoint of component of extension) in the students who have passed preschool course is higher than those who have not passed this course significantly. ( $t = -12.47$ ,  $P \leq 0.01$ )

## DISCUSSION AND CONCLUSION

By exploitation from findings and opinions of researchers in the arena of creativity and necessity for it's nurture/ education in the students since childhood, this research under topic of: "A study of effect of preschool course on the growth of creativity of elementary school first level students in academic year of 2000-2001" had been carried out on number of the elementary levels first-grade students of Tonekabon Township.

#### The first hypothesis

Rate of growth of creativity (component of genuineness) in the students who have passed preschool course compared to children/students who have not passed this course is higher.

#### Results of the first hypothesis

According to the descriptive table (3), comparison of average of two control and test group in the factor of genuineness showed that there exists a noticeable difference between them. Also, results obtained from *T* test inserted in table 4-4 have been suggested the significance of averages of two groups. Therefore, we conclude that there exists significant difference among the scores of component of genuineness in the students who have passed preschool course compared to those who have not passed

this course. Also, results of this hypothesis are in conformity with the results of the research conducted by Torrance (1986) and Vita (2010) and Maghsoudi (2008) and Karshaki (2003) based on effect of preschool course on the creativity of student in the component of genuineness.

#### **The second hypothesis**

Rate of growth of creativity (component of flexibility) in the students who have passed the preschool course compared to those who have not this course is higher.

#### **Results obtained from the second hypothesis**

In conformity with descriptive table (5), comparison of average of two control and test groups in the factor of flexibility showed that there is a noticeable difference between them. Also, results obtained from T test inserted in perceptive table of 4-8 have been suggested significance of difference between averages of two groups.

Therefore, we can conclude that there exists a significant difference between scores of component of fluency of the students who have passed preschool course compared to those who have not passed this course. Also, results of this hypothesis are in conformity with results of the research carried out by Girtan (2007), Maghsoudi (2008) and Perlz (2006).

#### **The fourth hypothesis**

Rate of growth of creativity (component of extension) in the students who have passed preschool course compared to those who have not passed this course is higher.

#### **Results obtained from the fourth hypothesis**

In conformity with descriptive table (9), comparison of average of two control and test groups in the factor of extension showed that there exists a noticeable difference between them. Also, results obtained from T test inserted in perceptive table 4-10 have been suggested significance of variance between averages of two groups. Therefore, we can conclude that there exists a significant difference among scores of component of extension in students who have passed preschool course compared to students who have not passed this course. Also, results of this hypothesis correspond with results of the research carried out by Ghasemi and Jahani (2009) and Saif (1996) and Souresh (2008).

As it was described, there is a significant difference between two groups in four factors of genuineness, flexibility, fluency and extension; that is, two test and control groups have had a significant difference in pretest and post test, and supposition of zero was denied and hypothesis of research was confirmed in this research. Therefore, with regard to the researches carried out regarding instruction of creativity (contrary to part theorists who construed the creativity as an inheritable and inherent process); it is shown that creativity can be taught to individuals, specially children. In other words, despite the imagination of masses of people based on that only few individuals are born creativity, the fact is that every talent, and this is teaching and experience which can provide the grounds of florescence and much more enrichment of this talent. Thus, in countries which are of an active education, education of creativity, as one of the most important objectives of education, has been taken into consideration.

In order to nurture creativity in children, all of their existence dimensions, including emotional, cognitive and educational dimensions and other dimensions must be paid attention. Education/nurture of creativity relates to family and environmental factors closely and family, as one of the most significant factors can play a role because possibility of appearance and nurture of creativity in the childhood years is very high.

In addition to family, educational school plays very important role in the florescence of children's creativity and preschool environment is the first educational environment into which the child enters and preschool education is the first step of formal education which has its own specific purposes, contents, plans and special methods and is an important level/ basis for other courses of public educational experiences and studies, initials years of children's life play a basic role in their growth and education/ nurture because according to what quoted by secretariat of cultural revolution council, "80% of child's personality takes form in the first 6 years of initial live."

Based on this, preschool education has been of special importance, and the major effort of governments is that, every day, more number of children are to be covered by instructions of this course and benefit from appropriate and constructive teachings considering these features and individual needs, and the experiences which we put at children's disposal have vital effects on their future growth. The more rich these experiences, the more opportunities will be found by children for growth and readiness to understand what things they need in present and future time.

In analysis of results of the first hypothesis, it can be said that because genuineness means uncommon and away-from-mind thoughts, the more individual keeps distance from scope of the daily ordinary problems in his/ her thought, the more genuineness and novelty he/she will have in his/her propounded ideas. As Elinikov has referred in his own book known as mega creativity, the prominent example to test genuineness is that we put a sheet of paper at disposed of individuals and tell them that they are free to place a point desirably everywhere in page. Most individuals will put the point in one of the sections of paper, but some body is more creative than all others who turns the paper up side down and puts a point behind it.

We have gotten used to think only about the stereotyped, determined and limited ways to solve our problems and this point was evident well while holding the test activities, particularly in the students who have not passed preschool course. Category of flexibility refers to multiplicity of scopes of individual's thinking cases of usage of a special object, a child is more creative than other children who refers to more extensive domains, and this subject was measurable in the Torrance test through activity of circles.

In response to this activity, most children referred to human body and it's members and attachments or it's legal mould under title of mother, father, sister, teacher and,, etc or spectrum of the fruits which were round from viewpoint of apparent shape; but, a part of children who were more creative propounded the more diversified and expansive scopes such as machine/ car and it's parts and components, various animals, variety of house hold dishes and appliances and their gaming equipments in the parks.

Which it can be said that diversity environmental stimuli and familiarization of the child with them through information transmissions, scientific excursion and usage of discovering activities can increase multiplicity of ideas in the child.

Fluency refers to number and quantity of responses and it is natural that the more the range of words and learning of child and, particularly, the higher the stimuli who the child sees, touches and tests on it, the higher will be his/her success in this part of activities and, therefore, the preschool teachers are expected to benefit more from educational class activities accompanied by play, joy and movement and, also, propounding of puzzle and incomplete and half finished stories in order to develop scope of child's knowledge considering features of children of this level.

Component of extension is based on individual's attention to common details supposed to be evident. The more the attention to details, the more the accuracy and attention will be increased, and raising of attention level will lead to receipt of environmental novelties. By exploitation from painting art not being imitative and considering model, but though propounding of attractive and diversified stories, the teachers encourages the child to deliberate and contrive in the details of subject and increases his/her creativity level.

The first and most important subject importance of subject of creativity in the present life is that, like a flying wing in the world of unknowns, draws the human toward the study of wider information, more depth of thought, expansion of opinion, search for not-gone ways and un said remarks/ talks, and, no doubt, if all individuals were supposed to consider sufficient available solutions and previous detections and findings, no new artistic work would create, no novel invention would record, and human life would become stagnant and fixed in one of the ages of creation of previous works and wouldn't find a way to improvement. And, due to possession of attributes, including plentiful energy, too much curiosity, inclination toward the joy and mobility and interest in detection of his surrounding world, the child is thirsty for learning and, at this time, preschool children are of a special position. For the first time, they have set foot in an educational environment to search for and regain a great part of the infantile dreams in it. They look furtively and impatiently in any direction and have numerous questions to ask, and key to enter into their own innocent world is only affection or kindness. They get friendly with the first attraction of the teacher's full-of-affection glance, and through establishment an intimate and logical relationship, they can be: Boil the open space.

In addition learnings are taught to them and the greatest life's puzzles are to be solved for them in a joyful and cheerful environment and in the mould of game.

Researching suggestions:

1. Performance of research with wider samples.
2. A study of effect of variety of creativity education/ nurture methods in increase of the creativity in children.
3. Comparative study of problem of teaching the creativity in girls and boys.
4. A study of innovation in the preschool children.
5. A study of role of sporting movement in the creativity.



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