



Evaluate Amount of Enjoyment Math Book Content of Fourth Elementary from Components of Creativity in Terms of Teachers

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Abstract: Present research has been done with aimed to evaluate amount of enjoyment math book content of fourth elementary from components of creativity in terms of teachers, had been applied and its method is descriptive- survey. Statistical population of this research Includes all fourth grade teachers Andimeshk city in the academic year 2018-2019 who are working in single base classes. Sample size was estimated based on cochran formula and preliminary study 79 people who were selected randomly. The data collection tool is creativity standard questionnaire that its reliability was obtained 0/92 with Cronbach's alpha coefficient. Research results show that in terms of teachers average each of considered quad components of creativity in this research (Fluid, innovation, Expandability and flexibility) in math book of fourth elementary that is higher than average that indicated the success of the new math book in paying attention to creativity. Also results of other research Indicate that there isn't significant difference between teachers based on demographic characteristics (gender, level of education, teaching experience at the fourth grade and work experience) in their assessment from the amount of attention to aforementioned book to the components of creativity. But in component " Participating in retraining course" significant difference has been observed between them.

Keywords: Creativity, Math Book, Fourth Grade, Teachers of Minab City

INTRODUCTION

Creativity issue has been studied from different directions. This concept as a motivational problem, as the basic condition for survival in industrial era and available equation in era of globalization and rapid developments in the field of science has been located consideration and providence by Education scholars, Psychologists, sociologists of education, Researchers and program planners. To look at issue of creativity in terms of education, dare to be claimed that is considered one of the most basic educational issues of present world (Manteghi, 2001). Kant in one originally proposed to educational planner's notes that children should not be trained just for the present, but also should be trained for the future. (Mirlohi, 2006). But the explosion of information that has emerged in the modern era, reveals realization of Kant's proposal as a Critical. So education should be train people which would be prepared for thinking, innovation, knowledge and to deal with the unknown and difficult situations. In other words without the general significance of information is denied, must remember from the information as raw materials, not finished product and the traditional emphasis in acquiring knowledge must change through repetition and memorize the contents to Creative learning that emphasis on importance of using knowledge, analyze and synthesize information (Ghasem Zadeh, 2010).

Reflection of aforementioned facts in level of education, has Caused basic mobility in most other nations, including Iran, in order to create changes in educational system. In Iran, for example, powers growth of imagination, initiative and develop creativity skills has been considered as the fifth principle of children's education 5-10 years in public education (Haj Forosh, 2011). Also Scientific country Research Council in "National Research Programmed of country" Evaluation of textbooks at different levels and determine its suitability in order to fostering talents and Create a spirit of creativity, innovation, has raised as one of the essential titles for the country's national research (Manteghi, 2001). Explores the concept of creativity and how to process it in textbooks different levels of education, especially in primary stage, is very basic and fundamental step that ever has not been done work about new authored math book of fourth primary both in terms of teachers. Despite the increasing importance creativity Issue and necessity of child rearing, adolescents and creative youth, With regard to this fact that children are entered education system in situations that psychologically have necessary readiness in order to accepted norms, skills, friendly community behavior and developing creative thinking (Meili, 1998). Some facts have claimed that Education in many parts of the world, didn't cope only in order to realize training creative people, but because of the extreme and excessive reliance on memories of students, sometimes has been effective in their mental deterioration (Manteghi, 2001). Torrance (1999) in their study points out that in about ten years old children's creativity curve was dropped, this decline is such that many of them never will not found creativity of children. Third landscape from which perspective can be seen to creativity issue, Landscape is imminent future of human society. Developments in technology, the electronic revolution and the explosion of information have given a new face to the contemporary world. Human industrial era can be enjoyed from capabilities and new features. Characteristic of humans and cross-industry Society is Creativity and Stay away from this issue, especially for developing countries is as losing survival bets. According to the results of scientific research about creativity and by considering facts that in terms of need for innovation and creativity in education and in the real world we face with them, and also with regard to the necessity according to the principles of approval of education in our community. Around developing skills of creativity, necessity and importance of research in the realm of creativity and Scientific examine of its place are established in textbooks for various courses of study. Although numerous issues, such as books, teacher, teaching space, teaching methods and similar cases are effective in creativity, but because of many research in the world have emphasized on textbooks and its impact on creativity (Kerka, 1999; Angeloska, 1996). Also due to the pivotal role of textbooks in primary education system of Iran and Teachers who have not seen Courses such as Training creative thinking and do not give to their self ,dare to innovate and violation of these books .In this research has been special attention to textbooks. With the hope that results of this research and support results of other studies, help Curriculum planners to amend math book of fourth grade of primary, Which Education Innovation will manifest in its texts. The main objective of the present study include: evaluate amount of enjoyment math book content of fourth elementary from components of creativity in terms of teachers.

Research Background

Creativity is one of the complex concepts related to humans that Provide a clear definition, Unambiguous, accurate and accepted by the majority of psychologists and educators and education from its , is difficult. Briefly are mentioned to some of these definitions: In the dictionary of Dekhoda term innovation has come in means creativity, innovations and has been proposed means "to create" in Webster's dictionary. Culture Psychology has brought in definition of the term creativity that Creativity is a technical term which refers to those mental processes that leads to solve issue, new ideas, Conceptualization and art forms that is unique and exquisite (Karimi, 2009). Glaver (1990) believes that Creative thinking and solving innovative issue has two indicators: Innovation (Ie it's unusual) and the value and validity (harmonize to

required work). Guilford knows creativity as Divergent thinking in problem solving and according to him, divergent thinking is thinking that sails to different directions. His research about creativity which is based on factor analysis methods, Opened new horizons in the recognition and measurement of creativity. Guilford in his wisdom structure knows creativity consisting of eight basic dimensions: Sensitivity to the issue, fluid, new ideas, flexibility, institutional, analytical, complexity and evaluation (Abedi, 2003). Gagne knows highest level of learning as problem solving and considers creativity as particular type of solve problems. But there is difference between problem-solving and creativity like other words. Included in problem solving individual faces with a situation that find a solution for it but in creativity person creates both positioning issue and both its solution (Seif, 2002). Due to extensive done research in the field of creativity, in this section, we briefly examine some of the previous studies that somewhat are in line with the objectives of this research. Korka (1999) remembers and writes from schools as a barrier to flourish creativity; Existing studies suggest that many people arrive late to the peak of their creativity and sometimes this time arrive after their 50 years. conducted research indicate that available training courses may be Rather than provide a platform for the emergence of people creative, Provide grounds to delay their creativity. Ozgeldi and Esen (2012) in their study entitled "Analysis of homework books and duties of math lesson in primary level In regard to creativity and innovation" Came to this conclusion that generally factors creativity in elementary math textbooks enjoys a normal distribution. Sengun and Iskenderoghlu (2010) in study have paid to examines amount of use of creativity in math book and came to this conclusion with regard to the components of creativity and divergent thinking, relevant book has been exceeded than usual and criteria that experts thought. Ghahremani (2011) in a study entitled "Evaluation of content of math book first grade to fifth-grade from the perspective of creative education pattern of Parallels "came to this conclusion that comply all elementary school mathematics textbooks with three components of creativity Parallels means principle of escape, the principle of attention and the principle of mobility. Rouhollahi (2011) did a research with the aim "The effect of offered education in secondary education on creativity of the students in third grade of high school " evaluated and compared amount of creativity of the students of third grade high school with creativity of same age students that had school dropped Middle school and thus had been less trained three years. Research results of Rouhollahi indicated that; offered education in secondary education, had been effective in emergence of non-creative features, follow the others, reliance and dependence on others, accustomed to what is customary, Lack of innovation and synergy among female students. Recent training about high school boys, In addition to the non-creative features that girls were caught had been effective in increasing feature such as despondency and weakness in activities, Shyness, Succumbing to all in them. Shaughnessy (1991) In an article that on how to shape an education system tailored to flourish students' creativity learn and writes need of richness to curriculum, in many schools in America, Pay little attention to educating creative students. Such as the use of tests that emphasize on true-false, multiple choice questions or filling vacancies in the text, this idea of the rule of textbooks which there is only one correct answer and like that are from most serious cases that are observable in mentioned schools. Arabi (2011) in his master's thesis entitled " investigating the Science education problems In the course of public education in Iran " Reza Pour (2011) in his Master thesis titled "Comparative Study of questions and homework in third grade elementary textbook with creativity factors in terms of Guildford" And Marashi (2013) in his Master thesis under the title "Comparative Study of questions and homework books of Science elementary as creativity Guildford » After the conclusion of empirical data with event have spoken from too much emphasis mentioned books on Cognitive memory and transfer data to students and disregarding of mentioned books have emphasized creativity factors. Torrance (1998), which has a long history of innovation research and measure creative thinking, Inspired by model of wisdom of Guildford, four feature Fluid (the production of multiple ideas and talent to produce great ideas), Initiative (ie uniqueness of ideas and talent producing new and unusual ideas), Flexibility (ie repairable and Talent of generating ideas with very different ways) and Expansion (ie expansion of ideas and talent, attention to

detail) poses for creative thinking. In the present study the aspects of Torrance that have been used for creative expression. So research conceptual model can be expressed as Figure 1:

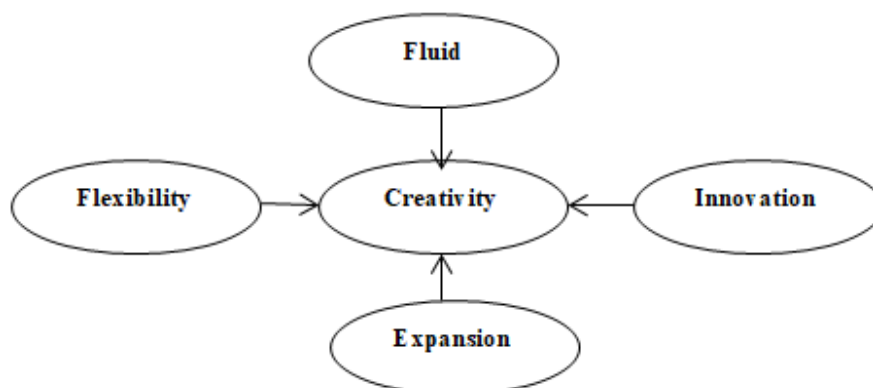


Figure 1: Research conceptual model, Torrance (1998)

Research Questions

- In math book of fourth elementary how much fluid component have been considered?
- In math book of fourth elementary how much innovation component have been considered?
- In math book of fourth elementary how much expansion component have been considered?
- In math book of fourth elementary how much flexibility component have been considered?
- Is the amount of attention to Components of the creativity in terms of teachers based on demographic characteristics (gender, education, teaching experience at the fourth grade, work experience and Participating in the course of retraining) different?

Method

Given that this research pay to evaluate amount of enjoyment math book content of fourth elementary from components of creativity in terms of teachers. Type of research in terms of purpose is applied and in terms of Performance is descriptive- survey Statistical population consisted of all teachers (male and female, formal, contractual) Fourth grade Andemshk city in the 96-97 school year that number is 159 who are working in single base classes. Since in this research statistical population variance is unknown, Conduct a pilot study on the number of members is necessary. Therefore, 30 people were randomly selected, and the questionnaires were distributed among them, after extracting data relating to response of mentioned groups and pre estimates variance, the sample size was obtained 79 people by using Cochran formula, the formula (1).

$$n = \frac{159(1.96)^2 \times (.32)^2}{159(.05)^2 + (1.96)^2 \times (.32)^2} = 79$$

Collection tool of data in this research is creativity standardized questionnaire that has been prepared by Manteny et al (2014) to measure creativity. This questionnaire contains 48 closed-answer questions and has been composed from four factors that determines total of 30/46 percent of the total variance. The first 11 questions of fluids with, second factor initiative with 14 questions, third factor expansion with 10 questions and fourth factor is the flexibility with 13 questions. Also according to research of Manteny and et al (2014), Reliability coefficient (internal consistency) has been achieved 0/92 by using Cronbach's alpha. Its responses has been provided likert scale method and as five choices of "very low" to "very high". Data analysis in inferential statistics (t-test and ANOVA) has been done by using statistical software SPSS.

Findings

Descriptive Findings

In order to identify demographic characteristics, Research sample in the form of demographic variables (gender, education, teaching experience at the fourth grade, work experience and participate in training courses) have been summarized in Table 1.

Table 1. Descriptive findings

Participate in training courses			Gender		
Yes	No		Man	Female	
53.8	46.2		29.6	70.4	
Education					
Diploma or less	Associate degree		Bachelor	Masters or higher	
9.9	10.6		61.3	18.3	
Teaching experience at the fourth grade			Work experience		
Less than 3 years	3 to 6 years	More than 6 years	0-10 years	11-20	21-30
50.3	32.4	17.3	22.5	39.9	37.7

Inferential Findings

In math book of fourth elementary how much fluid component have been considered?

Table 2: Average of fluid component

Variable	Degrees of Freedom	Average	t	Level of Significance
Fluid	141	52/4	22/41	000/0

Table 2 shows that average of attention of math book of fourth elementary to fluid component in terms of teachers is higher than average. So it is determined that in terms of fourth grade teachers, Features such as ability to generate great ideas , introduce new issues, ability to solve complex problems ... have been considered too much of average in this book.

In math book of fourth elementary how much innovation component have been considered?

Table 3: Average of innovation component

Variable	Degrees of Freedom	Average	t	Level of Significance
Innovation	141	46/3	55/10	000/0

Table 3 shows that average of attention of math book of fourth elementary to innovation component in terms of teachers is higher than average. So it is determined that in terms of fourth grade teachers, Features such as uniqueness of ideas, generate new and unusual ideas, initiative and ... have been considered too much of average in this book.

In math book of fourth elementary how much expansion component have been considered?

Table 4: Average of expansion component

Variable	Degrees of Freedom	Average	t	Level of Significance
Expansion	141	4/4	85/24	000/0

Table 4 shows that average of attention of math book of fourth elementary to expansion component in terms of teachers is higher than average. So it is determined that in terms of fourth grade teachers, Features such as development of views, attention to detail, enjoying new experiences and ... have been considered too much of average in this book.

In math book of fourth elementary how much flexibility component have been considered?

Table 5: Average of flexibility component

Variable	Degrees of Freedom	Average	t	Level of Significance
Flexibility	141	18/4	48/27	000/0

Table 5 shows that average of attention of math book of fourth elementary to flexibility component in terms of teachers is higher than average. So it is determined that in terms of fourth grade teachers, Features such as Possible modification of ideas, talent of generate ideas with variety ways, increase the ability to think and ... have been considered too much of average in this book. Is the amount of attention to Components of the creativity in terms of teachers based on demographic characteristics (gender, education, teaching experience at the fourth grade, work experience and Participating in the course of retraining) different?

Table 6: Average of each component of demographic

Variable	Average	Standard Deviation	T	Level of Significance	
Gender	Man	2/4	45/0	87/1	06/0
	Female	03/4		49/0	
Education	Diploma Or Less	17/4	54/0	48/0	7/0
	Associate Degree	1/4		42/0	
	Bachelor	27/4		42/0	
	Masters Or Higher	05/4		6/0	
Teaching Experience At The Fourth Grade	Less Than 3 Years	2/4	6/0	28/1	28/0
	3 To 6 Years	00/4		48/0	
	More Than 6 Years	08/4		47/0	
Work Experience	0-10	1/4	6/0	11/1	34/0
	11-20	12/4		35/0	
	21-30	22/4		37/0	
Participate In Training Courses	Yes	17/4	44/0	26/2	025/0
	no	88/3		65/0	

Table 6 shows that attention to Components of creativity in math book of fourth elementary in terms of teachers in terms of demographic characteristics(gender, education, teaching experience at the fourth grade, work experience and Participating in the course of retraining) There isn't significant difference in averages, but about " participate in training courses" average of those who have participated in courses is more than of those who haven't participated and this difference statistically is significant.

Discussion and Conclusion

Human civilization is indebted to anyone's creative ideas and its durability will be impossible without the use of creative that is considered the most excellent performance of human mind. In the current state of creativity is not a necessity, but is a condition for survival. It is important to emphasize education system on train and develop people who able to solve creative unpredictable problems (Torrance, 1993). In this regard textbooks can shed light on the role and importance of these concepts for students and even make it trimmed. Results of this study Suggests that according to creativity in primary school textbooks and particularly fourth grade have had fundamental change, Fourth grade teachers have stated that It's basic math book in four features fluid, innovation, flexibility and expansion that are main components of creativity in terms of Torrance (1998) have been noted more than average. Evaluate the first question of research that is around Attention of aforementioned book to fluid component show that majority of teachers believe features such as Production of multiple opinions and ideas abound have been noted more than average in fourth grade math book. Mathematical textbook Evaluation also confirmed this result, because activity-based and rely content of book on practical work and intellectual formation, can create the ability of generating new ideas in students. This results has aligned with previous results Ozgeldi and Esen (2012), which express the creativity factor in elementary school math textbooks in Turkey has a normal distribution, Research results Sengun and Iskenderoghlu (2010) Entitled "Evaluation according to the components of creativity and divergent thinking in elementary school mathematics textbooks in Turkey "and also research results Ghahremani (2011) in the field of content analysis math books first grade to fifth in terms of due to creativity factors. The second research question that is about pay attention to invention component. obtained T value, average, level of significance in Table 3 shows that Fourth grade teachers believe that in fourth grade math book has been paid more than average and significantly to features such as uniqueness of the ideas and generate new and unusual ideas. Elementary school students have good ability to express their opinions. Textbooks can improve and expand this ability or suppress them. Fortunately, teachers have evaluate positive and constructive the role of math in this context. The results of this part has aligned with previous results Ozgeldi and Esen (2012), which express the creativity factor in elementary school math textbooks in Turkey has a normal distribution, Research results of Sengun and Iskenderoghlu (2010) Entitled "Evaluation according to the components of creativity and divergent thinking in elementary school mathematics textbooks in Turkey "and also research results of Ghahremani (2011) in the field of content analysis math books first grade to fifth in terms of due to creativity factors. Check the third research question that is about Evaluate according to expansion component in the fourth grade math book, Shows that Teachers stated features such as develop ideas and attention to detail giving due regard have been well done that exceeded average and Statistically is significant. this results has aligned with previous results Ozgeldi and Esen (2012), which express the creativity factor in elementary school math textbooks in Turkey has a normal distribution, Research results of Sengun and Iskenderoghlu (2010) Entitled "Evaluation according to the components of creativity and divergent thinking in elementary school mathematics textbooks in Turkey "and also research results of Ghahremani (2011) in the field of content analysis math books first grade to fifth in terms of due to creativity factors. Investigation the fourth question of research shows that significant attention to flexibility Features in fourth grade math book from the point of view of teachers has been this foundation. So teachers expressed that features such as possible reform of ideas and producing idea with different methods has been significant at 99% attention. Create a character change in the false belief in students can be taken into account as a highly desirable goal in education. Students should be trained that look to issues from different perspectives and with different approaches and stay away from thinking and stereotypical views. this results has aligned with previous results Ozgeldi and Esen (2012), which express the creativity factor in elementary school math textbooks in Turkey has a normal distribution, Research results of Sengun and Iskenderoghlu (2010) Entitled "Evaluation according to the components of creativity and divergent thinking in elementary school

mathematics textbooks in Turkey "and also research results of Ghahremani (2011) in the field of content analysis math books first grade to fifth in terms of due to creativity factors. Fifth question pay to examine difference attention to the components of creativity in fourth grade math book based on the demographic characteristics of teachers The results show that in concepts of 'gender, education, Teaching experience in the fourth grade and work experience" isn't observed significant difference between teachers but about "participation in retraining courses new authored books " there is Significant differences between participants and those who have not participated. These results show that retraining courses that are held each year before the start of the school year, could be effective in attitude, vision and skills of teachers towards new authored books. According to the outcome of obtained results that, Teachers have evaluated amount of attention to all four components of creativity higher than average present book offered following suggestions:

- Retraining courses of new authored books to be held for all sections and all bases, because according to the results of this research have a significant and favorable impact on the Teachers and Presenters of curriculum.
- Due to the axis change in elementary textbooks for all bases, research with same method and same components is done about new authored math books of other grades and is compared their results with results of this research.

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