

**Designing and compiling first grade primary Persian book in terms of research-based approach and comparing it to current Persian book in order to increase and persuade students' creativity from viewpoints of teachers and curricular experts in academic year 2013-14**

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**Abstract:** The aim of this study is to design and compile research content for first grade primary Persian book in terms of research-based components including stimulation of curiosity feeling and problem seeking, planning for research and how to educate process of data gathering by observation and other sources for data transfer and comparing it to current book using views of teachers and experts. This research is applicable in type and background methodology has been used in order to do this research. For this purpose, statistical population of teachers and curricular experts was used. 51 teachers and 14 curricular experts were chosen using random sampling. Considering that the aim of research is to investigate similarity and agreement or dissimilarity and disagreement of two distributions (teachers and experts) on creativity dimensions in compiled and current books,  $\chi^2$  square has been used to analyze data inferentially in order to decide whether agreement or disagreement of two distributions (teachers and experts) on two books is different regarding components of creativity. SPSS software, version 19 has been used to analyze data. Present research includes 3 hypotheses. Hypothesis 1: first grade primary Persian book organized regarding stimulation of curiosity and problem seeking (of research components) in students is more effective than current first grade primary Persian book. Hypothesis 2: first grade primary Persian book organized regarding planning for research (of research components) in students is more effective than current first grade primary Persian book. Hypothesis 3: first grade primary Persian book organized regarding how to train process of data gathering by observation and other resources for data transfer (of research components) in students is more effective than current first grade primary Persian book. All above mentioned hypotheses have been confirmed in text, image and activity in 0.01 level. First hypothesis has been confirmed considering component of sensitivity to problem (one of eight creativity components of Gilford). The second hypothesis has been confirmed considering four creativity components of Gilford namely synthesis, analysis, complexity and evaluation. Third hypothesis has been confirmed considering three creativity components namely fluidity, new ideas and flexibility. In general, considering research results in which hypotheses have been confirmed, it can be concluded that the author has been successful in designing and organizing first grade primary book in terms of research-based approach. In addition to research-based approach, the compiled book is able to increase and persuade creativity in students considering research results obtained from views of teachers and experts.

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**Keywords:** Research Based approach, Creativity, sensitivity to the problem, fluidity, new ideas, flexibility, synthesis, analysis, complexity, evaluation.

### Introduction

The present study is aimed to design and compile research content for first grade primary book in terms of research-based components including stimulation of curiosity feeling and problem seeking, planning for research and how to train process of data gathering by observation and other sources for data transfer and comparing it to current book using views of teachers and experts. Three Categories have been considered for research-based approach: stimulation

of curiosity feeling and problem seeking, research planning, training how to gather data by observation and other sources.

In order to stimulate curiosity feeling of students in first grade primary book, silence method has been used. Creating creativity in students has been used to stimulate curiosity feeling and problem seeking, to plan research and to train process of data gathering by observation and sources related to it. Texts, images and activities that increase creativity in

students have been used to increase and persuade creativity in students. Finally, the effect of creativity on research-based approach of students has been investigated using views of teachers and experts. A comprehensive and deep comparison has been made between research content of first grade primary book and current content of first grade primary book in academic year 2012- 2013 organized based on mentioned categories in three dimensions of text, image and activity. Researches done in this field include results of a study by Pirls (2001, 2006) that was repeated per five years for measuring performance of countries in reading, showed that none of Iranian students in Pirls 2001 could take a level higher than 621 (average performance) and in Pirls 2006 only 1% of students could reach this level. Results of Pirls 2006 showed that students who read story books or novels outside the school with average performance (435) had higher performance than students who never read story books (356) (Karimi, 2009, 26, [1]). Considering comparative study of problem seeking process in syllabus of secondary math education in America, Australia, Japan, Singapore and Iran, research results of Reihani, Ahmadi and Zarandi(2012,[ 9]) showed that in spite of differences in approach and process of problem seeking in curriculums of four countries, problem solving is an essential part of secondary math education in these countries and the best implementation of problem solving process belongs to Japan. In Iran, it is recommended that problem solving place and change of text books are explained with respect to approach of problem solving, training and deepening culture of problem solving. In a study done by Mazidi, Golzari (2012, [16]) on extent of creativity components in primary Persian books, results showed that paying attention to creativity is lower than average in first and second grades of primary school (involvement factor lower than 1) and it was higher than average in third and fourth grades of primary school (involvement factor higher than 1) and fundamental revisions and modifications were required considering creativity components particularly in texts and images of books. Sharafi (2011, [13]) in a study on designing and organizing art syllabus based on incorporation of art and science with focus on concept of art production in fourth and fifth grades of primary school, investigated application of art with materials including science and has offered a model in this regard. Rezaee, Ghadampoor and Pasha Sharifi (2008, [8]) in their study on interest and motivation in studying and its effectiveness on guidance school students concluded that using a model designed in a research-based context in science causes higher personal efficiency in students and higher attempts in scientific-research

activities and more importance of science for them. Results of comparing primary science books in Iran, America and England regarding range of attention to research-based approach, Asefijani, Zamani and Nasrabadi (2008, [1]) showed that science books in all three countries are research-based with only one difference that in all countries the highest frequency relates to skill of curiosity feeling of students and the least frequency relates to skills of hypothesis construction, hypotheses testing, data transfer. Frequency distribution of each skill is also different in countries. By research results of function of research-based education in how to educate specialized doctorate in medical sciences, Haghdoost et al (2009, [5]) showed that research-based education can meet some new requirements in scientific development of the country and make it possible to use more capacities of the country and grow skillful scholars for professional activities in sectors other than universities. Regarding common obstacles in research-based development in university departments Tirgar and Tehrani (2009, [3]) showed that according to faculty members these obstacles are social and cultural (67/75%), lack of financial and economical facilities (67.5%), executive and official problems (56.75%) and according to students, these obstacles are: social and cultural (54.55%), lack of financial and economical facilities (84.10%), executive and official problems (59.35%). Results of research done by Einollahi et al(2009,[14]) on research-based approach in ancestors' medicine showed that ancestor medicine has been research-based with focus on performing tests and preference of experimental method to analogy method and mathematic revision. Results of study done by Chashm Cheragh (2007, [4]) on effect of teaching methods based on creativity techniques in teaching and learning of students showed that research is a suitable bed for reinforcing and expanding spirit of innovation and creativity. As a facilitator in learning process of student, teacher can educate creativity in children and adolescents by innovation, flexibility, not forcing students to memorize, humor, avoiding instructional format methods, increasing self-confidence, stimulating curiosity feeling in learners and combining education and research. Khosravani and Gilani (2007, [6]) in their study about the relation between creativity and mental health concluded that there is a significant relation between creativity and mental health. In other words, individuals with higher creativity, experience less anxiety, depression and stress and put more value on themselves. Zakariaee (2009, [10]) in a study on effect of performing primary syllabus by benefiting art (manufactory) in creativity of female fifth grade primary students in district 5, in Tehran, confirmed validity and reliability

of artistic activities in three creativity components (fluidity, innovation and flexibility). Results obtained from Noorian's study (2008, [20]) for content analysis of the first grade Persian primary text book suggest that 7.52% of detail goals are without written texts and 34.1% of detail goals are without images and 7.41% of detail goals are without exercise. Therefore, half of detail goals of curriculum is not corresponded to theoretical models for realization of learning reading and writing. This can arise difficulties in education. Results of study done by Spronken and Walker (2010, [23]) on whether or not research based learning can reinforce the link between teaching and education depended research, showed that if goal of teachers is to reinforce the link between teaching and research, they should take a research-, open- and heuristic based approach although structured and guided forms of research can be suitable for special research skills. Forsy (2003, [22]) in a study on evaluation of learning basic skills in students from Washington concluded that students are weaker in writing skill than other skills. Fancsali et al (2002, [21]) in their study concluded that exercises with writing in transferring writing skills to students are effective and helpful. Kuhn and Pease (2008, [24]) in a three year study on fourth and sixth grades of primary school done for challenges students should face due to research-based approach, concluded that students who demand research activities sequentially, face challenges in understanding research objectives, identifying questions, considering evidence, detecting models, making controlled comparisons, interpreting incrementally complex data, supporting claims and plotting aligned results. After investigating researches done about this issue inside and outside the country, present study is going to investigate research-based approach of current book and write a book about research-based approach in order to increase and encourage creativity in students and compare these two books. For this purpose, three hypotheses have been considered as follows:

1-Text of first grade primary Persian book organized regarding stimulation of curiosity feeling and problem seeking (of research components) is more effective in students than current text of first grade primary Persian book.

2-Text of first grade primary Persian book organized with respect to research planning (of research components) is more effective in students than current text of first grade primary Persian book.

3-Text of first grade primary Persian book organized with respect to training process of data gathering by observation and other sources for data transfer (of research components) is more effective in

students than current text of first grade primary Persian book.

In present study, research based approach is a method that includes categories such as stimulating curiosity feeling and problem seeking, research planning and information gathering by observation and other sources. Creativity means a thought that should include at least one of following components: sensitivity to the problem, fluidity, new ideas, flexibility, synthesis, analysis, complexity and evaluation.

#### **Research methodology**

This research is applicable in type and background research methodology has been used to do this research. This method investigates difference or similarity of views of different groups using technique of inferential statistic in order to reach a special agreement about an issue (Naderi, Seif Naraghi, 2013, 66-67) [12]. In present research, creativity is independent variable and texts, images and activities that promote students' creativity have been used to increase and persuade students' creativity. Finally, effect of creativity on research-based approach of students (dependent variable) was investigated using views of teachers and experts. A comprehensive study and comparison was done between research content of first grade primary Persian book organized by mentioned categories and current first grade primary Persian book in three dimensions of text, image and activity in academic years 2013-2014. Due to designing and organizing mentioned Persian book, three categories has been considered for research based approach. Stimulation of curiosity feeling and problem seeking, research planning, training process of information gathering by observation and other sources were used to study research content and its effect on increase and persuasion of creativity in students and to compare designed book and current one from views of teachers and curricular experts. For this purpose, firstly, preliminary and theoretical studies were done to determine variables. The theoretical framework was derived. Research content was designed and organized using theoretical framework. Then, content of textbook was compared to that of current book using views of teachers and curricular experts. Validity and reliability of categories of research based approach were obtained in a study done by Asefijani et al (2008, 140, [1]). Experts' opinions were used to study questionnaire validity. The questionnaire was given to five experts then its content was tested by experts and their views suggest content validity of the questionnaire. In order to study reliability of post- test of primary implementation, after two weeks, again 15 persons from sample group (teachers and experts) about current and compiled

books, respond organized questionnaire and correlation obtained in different dimensions was between 0.71 and 0.79. Statistical population of teachers was obtained to determine sample volume. Statistical population of present study are professional referees namely teachers and curricular experts. In order to determine sample volume, there were 8 creativity components and 7 persons were considered for each component. Therefore, 56 teachers were chosen using random sampling<sup>1</sup> and finally 51 teachers responded the questionnaire. For statistical population of experts, specialized forces of Kerman province (14 persons) were used due to lack of specialized force. In order to analyze data, descriptive statistic relative to data was used<sup>2</sup>. Considering that the aim of present study is to investigate similarity and agreement or dissimilarity and disagreement of two distribution (teachers and experts) on creativity in compiled and current books,  $\chi^2$  square has been used in order to decide whether agreement or disagreement of two distributions is different regarding creativity components in two books. In order to analyze data, SPSS software, version 19 has been used. Asefijani, Zamani and Nasrabadi after studying library, internet documents and determining validity, considered categories for research based approach including stimulation of curiosity feeling and problem seeking, research planning, data gathering via observation and other sources, data organization and interpretation, prediction and hypothesis construction, research design and hypothesis testing, conclusion and data transfers. In his model called structure of intellect, Gilford views creativity components consisting of eight basic dimensions such as sensitivity to problem (curiosity), fluidity, new ideas (innovation), flexibility, synthesis, analysis, complexity and evaluation (Mazidi, Golzar, 2012, 82 cited by Abedi, 1993, [16]) and if these components are compared to categories of research based approach, it will be evident that creativity is created in students by stimulation of curiosity feeling and problem seeking, research planning and other research based categories because in research based approach, activities are provided by questions and interests of students and learner starts to explore and find the relation among events due to his activity and tries to find patterns and associations related to his observation in surrounding world (Asefijani et al, 2008, 136 cited by Soltani Kofrani, 2004, [1]). In order to respond the first

hypothesis, opinions of teachers and experts were analyzed about sensitivity to problem (of Gilford creativity components) because in sensitivity to problem, things that stimulate curiosity and sensitivity of students to some issues are outlined and it is in agreement with stimulation of curiosity feeling and problem finding in research based components.

Hypothesis 1: text of first grade primary Persian book organized with respect to stimulation of curiosity feeling and problem solving (of research components) is more effective in students than current text of first grade primary Persian book. Obtained results showed that  $\chi^2$  square value (14.25) for sensitivity to texts of compiled and current books,  $\chi^2$  square value (15.15) for sensitivity to images of compiled and current books,  $\chi^2$  square value (14.57) for sensitivity to activities of compiled and current books were in 0.01 significance level. According to results obtained, it can be said that opinions of teachers and experts about sensitivity to compiled and current textbooks were close and dependent to each other. Considering that frequency of teachers and experts about sensitivity to compiled book is higher than that of current book, it can be said that according to views of teachers and experts, sensitivity dimension in compiled book is superior to that of current book and the first hypothesis is confirmed.

Hypothesis 2: Text of first grade primary Persian book organized with respect to research planning (of research components) is more effective in students than current text of first grade primary Persian book. Research planning in addition to components of combination, analysis, complexity and evaluation are reached because synthesis means the ability to combine phenomena, ideas and concepts and if necessary creative thought incorporates different events and subjects and uses them optimally. Analysis is a thinking that can analyze issues and recognize its constituents. Complexity is the ability of observing relations and making cohesion based on detail information. Evaluation is to judge affairs, information and process of facing with problems and when students reach these stages of creative thought, they can easily plan for the research. Results obtained from synthesis component showed that  $\chi^2$  square value (14.32) for synthesis of texts in compiled and current books,  $\chi^2$  square value (16.21) for synthesis of images in compiled and current books,  $\chi^2$  square value (12.37) for synthesis of activities in compiled and current books were in 0.01 significance level. According to results obtained, it can be said that opinions of teachers and experts about texts of compiled and current textbooks were close and dependent to each other. Considering that frequency of teachers and experts about synthesis of compiled book is higher than current book, it can be

<sup>1</sup> - Naderi, Seif Naraghi, 107-120, [12]

<sup>2</sup> - Delavar, 2008, 320-327, [7] - Pasha Sharifi, Najafi Zand, 2005:211, [2]

said that according to views of teachers and experts, synthesis dimension in compiled book is superior to that of current book. Results obtained from analysis component show that  $\chi^2$  square value (17.44) for analysis of texts in compiled and current books,  $\chi^2$  square value (15.25) for analysis of images in compiled and current books,  $\chi^2$  square value (12.22) for analysis of activities in compiled and current books were in 0.01 significance level. Results obtained from evaluation component show that  $\chi^2$  square value (11.47) about evaluation of texts in compiled and current books,  $\chi^2$  square value (14.22) about evaluation of images in compiled and current books,  $\chi^2$  square value (10.37) about evaluation of activities in compiled and current books were in 0.01 significance level. Results obtained from complexity component show that  $\chi^2$  square value (11.33) for complexity of texts in compiled and current books,  $\chi^2$  square value (11.84) for complexity of images in compiled and current books,  $\chi^2$  square value (10.55) for complexity of activities in compiled and current books were in 0.01 significance level. According to results obtained, it can be said that opinions of teachers and experts about texts of compiled and current textbooks were close and dependent to each other. Considering that frequency of teachers and experts in all components namely synthesis, analysis, evaluation and complexity of compiled book is superior to current book and the second hypothesis is confirmed.

Hypothesis 3: in order to respond the third hypothesis that text of first grade primary Persian book organized with respect to training process of data gathering by observation and other sources for data transfer (of research components) is more effective in students than current text of first grade primary Persian book, three creativity components such as fluidity, new ideas and flexibility have been used because in fluidity, the ability to produce many responses for an open question or problem is provided and it is impossible for first grade primary student who is in stage of objective operation unless he can obtain his data and information by observation. On the other hand, it is a fluid thought that provides better and higher observation in student and components of new ideas provide students with new, evident, general and unit responses related to the problem and they are successful in training process of data gathering by observation if thought of student has the ability to give new ideas and the ability to produce unusual ideas by observing a situation from different aspects is created in students due to flexibility and it is very effective in data gathering by observation because observing a situation from different aspects associates directly with the ability of better observation. Obtained results

show that  $\chi^2$  square value (11.74) for fluidity of texts in compiled and current books,  $\chi^2$  square value (2.24) for fluidity of images in compiled and current books,  $\chi^2$  square value (2.77) for fluidity of activities in compiled and current books were not significant in 0.01 level. According to results obtained, it can be said that opinions of teachers and experts about texts of compiled and current textbooks were close and dependent to each other. Considering that frequency of teachers and experts about fluidity in compiled book is higher than that of current book. It can be said that compiled book due to fluidity in texts is superior to current one based on views of teachers and experts but both books are fluid in dimensions of images and activities. Results obtained from new ideas and flexibility show that  $\chi^2$  square value (17.55) for new ideas in texts of compiled and current books,  $\chi^2$  square value (14.17) for new ideas in images of compiled and current books,  $\chi^2$  square value (12.27) for new ideas in activities of compiled and current books were significant in 0.01 level and result obtained from flexibility show that  $\chi^2$  square value (10.66) for flexibility of texts in compiled and current books,  $\chi^2$  square value (10.72) for flexibility of images in compiled and current books,  $\chi^2$  square value (10.94) for flexibility of activities in compiled and current books were significant in 0.01 level. Therefore, considering that in new ideas and flexibility, compiled book is superior to current one based on teachers and experts' views and fluidity in texts of compiled book is superior to that of current book and both books are fluid in terms of image and activity, it can be said that this hypothesis is confirmed.

Therefore all hypotheses were confirmed in dimensions of text, image and activity in 0.01 level and freedom degree 3.

### **Results and discussion**

In order to respond hypotheses, a book was compiled and in compiled book, it is tried to use growth and development of mental skills. Advocates of this view believe that the most important role of school is to help students learn how to learn and provide with students learning opportunities in order to reinforce their mental skills and the teacher plays role of a facilitator (Maleki, 2010, 13, [17]). In compiled book, since students are encouraged to fill in blanks available in poems and stories and complete pictures and write the name of picture and they have creative activities for word completion, then learning opportunity is provided for students and they are encouraged to solve problem. In compiled book, it is tried to use silence method because in view of Hegel, silence is the main condition of education and Helming believed that silence helps human being to act instead of react, to unify instead of separate and to

become interested in original values instead of being lost in attractive affairs (Mehr Mohammadi, 2009, 423-415, [19]). In this book, there is a blank page in the second page of every lesson in order that student draws his thought. And in the margin a picture with related sound has been drawn in order to guide the student. In guide book, it is emphasized that the student can draw or write whatever he wishes. Since in research-based approach, problem solving is due to student growth, objective of education and curriculum is to grow thought and judgment of student and in this approach, experiences of student including his interests, tendencies and requirements are a starting point for passing growth gate. As a result, current experiences of students are bridged as primary stages of growth process towards scientific structured experiences as end stages of growth process (Salsebili, 2005,67, [11]). Also in compiled book, it has been tried to use current experiences of student such as recognition of picture and ability to draw easy shapes so that the student become curious to write the word by looking at the shape and reach the related word using simple shapes in which related word has been inserted. Since art application has been confirmed by researches of Debono (1965), Khatna (1966), Piaget (1960), Gillespie (1972), Turens (1975), Eisner (1998), Koorter (1999), Kanlife (1998), Don (1995), Goodman (1976), Jackson (1998), Manner (1998), Yang (1997) as an educational instrument for activating learners in learning process and also as a powerful weapon to suppress oldness and growth of creativity in students (Zakariaee 2009, 59 cited by Rahmati 1999, [10]) and in brief, if we wish to say about cognitive, social, emotional and physical effects of manufactory on students, we would say that manufactory can grow cognitively imagination of primary students and it becomes a suitable bed for growth of creativity, organization and production of new phenomena and change of environment. Making manual things provides with students' opportunities in order that they can study and observe natural and artificial phenomena of human precisely by analytical, thoughtful activities in order to understand depth, perspective, form and change of phenomena and discover logic used in them so that they can research in different domains (Zakariaee 2009, 59 cited by Lancaster 1994, [10]). For this purpose, in compiled book, drawing and manufactory have been used to grow students' creativity. Since if the relation between imagination and creativity is investigated for increasing and persuading creativity in students, it will be clear that imagination belongs to a thing which is not existent in the outside world while creativity relates to realization or creation of what has been imagined. Therefore, imagination minus

creativity is outlined but creativity minus imagination cannot be described. For this purpose, Egan's theory of developed mind (1997) can be used as a theoretical basis in order to attract attentions to imagination capacity. This theory defines five stages of mental capabilities and cognitive instruments:

- Body understanding that results from application of body and senses and belongs to ages 0-2 years old

- Mythic understanding that results from application of verbal language and reliance in story and poem and belongs to ages 2-8 years old

- Romantic understanding that results from application of a written language and belongs to ages 8-15 years old

- Philosophical understanding that results from abstractions and theory and belongs to ages 15 years ole onward

- Temporal and flexible understanding that results from language flexibility for complex relational goals and special age range has been outlined for this step (Mehr Mohammadi, 2010:8-9, [18]). Therefore, it seems that in order to reach creativity by imagination, it is necessary to use poem and story. In compiled book, education is done by poem and story. According to Egan, first grade students with ages under 8 years old place in this stage. The best way to educate creativity is via imagination and thus poem and story. This subject has been considered in compiled book.

In general, considering the compiled book, first hypothesis that first grade primary Persian book organized regarding stimulation of curiosity and problem seeking (of research components) in students is more effective than current first grade primary Persian book and the second hypothesis that first grade primary Persian book organized regarding planning for research (of research components) in students is more effective than current first grade primary Persian book and the third hypothesis that first grade primary Persian book organized regarding how to train process of data gathering by observation and other resources for data transfer (of research components) in students is more effective than current first grade primary Persian book all of them have been confirmed in dimensions of text, image and activity in 0.01 level with freedom degree 3.

Regarding research results in which hypotheses were confirmed, it can be concluded that the author has been successful in designing and organizing first grade primary Persian book in terms of research-based approach. In addition to being research-based, compiled book increases and encourages creativity in students considering results obtained from views of teachers and experts. Considering results of compiled book that showed compiled book is research-based,

and increases and encourages creativity in students and characteristics of compiled book, it is recommended that authors pay attention to creativity components including sensitivity to problem (stimulation of curiosity feeling), synthesis, analysis, complexity, evaluation, fluidity, new ideas, flexibility because results of present study show that these components in writing texts, image and activity increase and encourage creativity in students and research-based approach of students.

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