



ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 5.2
IJAR 2020; 6(9): 253-259
www.allresearchjournal.com
Received: 08-07-2020
Accepted: 12-08-2020

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Comparison of creativity components in the content of the experimental science curriculum in elementary period of Iran and Afghanistan

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Abstract

The purpose of this study was to compare the components of creativity in the content of the curriculum of experimental sciences in Iran and Afghanistan from the perspective of Plesk's Creativity Training Cycle which can provide the ground for creativity, innovation, and thinking. The statistical population of this method was the fourth, fifth and sixth-grade science books of the two elementary schools of the two countries and was classified and analyzed according to the content analysis list based on the components of the Plesk Creativity Training Cycle. The results showed that the creative components in the content of the experimental science curriculum of both countries were highest in the aspect of mental readiness, concept extraction, purposeful observation and flexibility and decreased in the stages of imagination, development, and action, respectively. The content also emphasizes more memory and less attention to other aspects of creativity. Overall, the content of the experimental Science Curriculum in Iran 742 and Afghanistan 669 is a creative 87 in the fourth-grade book and 10 in the sixth-grade textbook compared to the content of Afghanistan's empirical science curriculum and in the fifth grade in the country 24 in comparison with the fifth grade textbook in Iran. Observing the components of creativity in the preparation and development of an empirical science curriculum provides the basis for the process of creative education and nurturing.

Keywords: Curriculum, creativity, component, invention, concept extraction

Introduction

The content of the experimental science curriculum in elementary school does not adequately address the needs of students. The curriculum in empirical sciences is now needed to provide students with creative thinking conditions and encourage creativity and innovation in the educational environment. The use of multimedia power of teaching in textbooks and empirical science lessons Brotherhood Summary and Knowledge Services Creativity Students Knowledge is one of the most important unique attributes that God Almighty has bestowed upon the human being with this absolute power, power and privilege and Passage of this sign leads to the attributes of the Creator (Salimi and Osara, 2013) [23]. Today, experts consider creativity to be the foundation for any change and innovation, so new studies show that the center of gravity of future movements is creativity and the extent to which creative thinking is utilized. Research results (Khaifi, and *et al*, 2009) [13], show that creative training has increased the level of metacognitive components of creativity in trained students (Hassan and al, 2012) [10], stated that in the teaching of empirical sciences in particular in elementary school teachers do not have full mastery of the curriculum; Most teachers in primary science education emphasize memory rather than fostering discipline, scientific thinking and teaching scientific facts and the existence of scientific behavior in students. (Qasimi and Jahani, 2009) [20] in his research (Evaluating the Objectives and Content of Elementary Science Experimental Textbooks from a Plesk Creativity Education Modeling Perspective) found that the Elementary Science Experimental Science Curriculum provided the conditions for creative thinking, creativity, solving Problem-making and theory do not provide, in other words, less interest in communication in the structure of the curriculum of the empirical sciences, and no specific plan for creativity training is considered. Therefore, interpretive analysis of theories and models of creativity education in the science curriculum in

elementary school is considered essential. (Khaifi, and *et al*, 2009) ^[13] show that creative training has increased the level of metacognitive components of creativity in trained students.

The purpose of this study was to compare the components of creativity in the curriculum content of elementary science textbooks in Iran and Afghanistan from the perspective of Plesk's Creativity Education Cycle, which observes the development of curriculum in the field of thinking, innovation and creative innovation in students. In this study, the concept and definitions of creativity from the point of view of modern scientists, fostering creativity and its solutions, comparing the chapters and pages of books in both countries, and comparing the creativity components assigned to the fourth, fifth and sixth-grade science books of both countries are discussed separately. The table below lists the main components of creativity in curriculum content analysis based on Plesk's model of creativity from Kawa and Hedayati (2017) ^[12] quoted by Plask (1997). Plesk's model of creativity is a four-stage model that includes preparation, imagination, development, and action. This template contains features and components in its sub-categories that have been suggested for compiling and organizing effective content to foster creativity in component learners at each stage of the template. In the preparatory phase of the Creativity Components, purposeful observation and extraction of concepts are included, the imagination and developmental stages of the components of flexibility, magnification, magnification, replacement, inversion, composition, attention to detail and reinforcement are considered, in the evaluation and evaluation phase. The application is in practice.

The concept of creativity

The concept of creativity is important, yet extremely complex (Mahdavi Nizhad, 2013) ^[17]. Creativity is acquired and it is possible to enhance the creativity of individuals through education and familiarity with the tools and methods of creativity (Asadi and *et al*. 2017) ^[3]. (Azami and *et al*. 2008) ^[6] The concept of creativity expresses the ability to examine an issue from different perspectives on a topic that sheds new light on the subject and to reorganize it to bring new knowledge and insights into the essence. To shake up that issue Creativity is the most important and fundamental ability of man and the most fundamental factor in creating value that plays a vital role in all aspects of his life. In other words, creativity is the full utilization of the mental faculties to create a new thought or solution or concept towards the creative person himself (Asghari and Sharifi, 2017) ^[4]. For David (David, 2012) ^[9], the concept of creativity has been an important aspect of human development and considered it essential for the development of one's early mind. The concept of creativity is considered one of the most distinguished human cognitive abilities (Salimi and Osara, 2013) ^[23]. Creativity is one of the hallmarks of human behavior that seems to be the most mysterious and at the same time the most critical characteristic of human development (Bakhtiary and Alamian, 2016) ^[7]. Throughout history, the concept of creativity and creative thinking has undergone many transformations. At first, it was thought that creativity is a special ability that is exclusive to a specific group of people and therefore untrained (Alburzai, 2015) ^[1]. For Gifford, quoting Zarea (2016) defines creativity as a new approach to

problem-solving, as opposed to convergent thinking, which is to find the right answer. Creativity is one of the desirable human traits that schools and training centers have to take seriously for their education (Qasami and Jahani, 2009) ^[20]. Pierre Khaifi and colleagues (Khaifi, and *et al*, 2009) ^[13] quoted Ama Bailey (1987) ^[24] as arguing that creativity is a social phenomenon and arises from the needs of society and family conditions.

Breeding creativity

Breeding of creativity is an important goal in educational systems (Madahi, 2018) ^[16]. Creativity is essential in every aspect of the business, from designing a product or service to advertising and marketing to its actual implementation. Therefore, the emphasis on developing creative skills in educational institutions as a common lesson in helping students prepare for an unusual future has been emphasized by (Baruah, J & Paulus, B.P. 2019) ^[11]. (Zarei, 2008) lists the sources of creativity in the content of the curriculum for being up-to-date, regular, easy to access, accessible, high quality, varied and entertaining and can lead to creativity. Accordingly, research (Asphanjani and *et al*. 2007) shows that in the empirical science books of Iran, the most attention is paid to the development of a research-oriented spirit at the third, second, third, and fourth, respectively. Not implemented (Salimi and Osara, 2013) ^[23] An empirical science curriculum that has a prominent place in elementary education, including well-organized content and well-known methods that can help foster creativity (Qasami and Jahani, 2009) ^[20]. Images and tables have also been considered one of the most important tools for fostering creativity (Salimi and Osara, 2013) ^[23]. These findings suggest that images and tables foster creative skills and increase creativity in learners. (Zarai and Tajik, 2017) ^[27] have found that teaching methods and teaching-related activities are directly related to nurturing creativity and can enhance students' learning and creativity. Another study shows that the environment of growth and education of individuals plays a major role in development and creativity, that is, when students think creatively and act creatively, therefore, the growth and development of creativity lies in education (Zaria, 2016). In a study by (Clover and Gorodetsky, 2011) ^[14] showed that creative evaluation processes can be calculated as a creative feature or product, and students' creativity can be observed by a draft and a different view. Regular students can be meaningfully compared, he added, with methods that help evaluate and integrate creativity more appropriately and support the link between intellectual strength and creativity. (Asadi and *et al*. 2017) ^[3] shows that as creativity increases innovation also increases.

Creativity is also closely linked to problem-solving (Azami and *et al*, 2008) ^[6]. He has generally divided creative problem solving into six stages.

1. Object Finding
2. Fact Finding
3. Problem Finding
4. Idea Finding
5. Solution Finding
6. Acceptance Finding

While solving the problem of reasoning, it also helps the students' creativity. In this regard, Ping *et al*. (Ping and *et al*. 2019) ^[19] conducted a pilot study and stated that creative activities enable students to improve their reasoning skills and students' ability to write scientific reasoning throughout.

Students in biology through creative continuing education can demonstrate tremendous change as a method in everyday life, and especially in students' understanding of biology and their attitude toward biology (Saka and *et al*, 2016) [24]. As creativity presents (Alburzai, 2015) [1]. New formulas and useful ideas in the field of education, students can solve the problem so students need to practice creativity skills (Daki, 2013) [8]. Creative teaching for students' creative teaching methods builds their personality and abilities (Lee, 2013) [15]. Creative people have specific attributes such as doing independent work, risk-taking, working discipline and tolerating important situations, these skills enable individuals to apply their knowledge, skills, and learning in a new way to problem-solving

Research Method

The research method is the principal component analysis. This method is used to determine the existing data pattern and to express the data in such a way that the differences and similarities are highlighted (Mohtadi, 2018) [18]. In content analysis, the main components of creativity are received and compared based on Plesk's model of creativity. Plesk's model of creativity is a four-stage model that includes preparation, imagination, development, and action. This template has its own set of features and components that have been suggested for formulating and organizing effective content to foster creativity in component learners at each stage of the template.

Table 1: Characteristics of the Fourth Book of Experimental Sciences of Iran and Afghanistan

Specifications of the fourth book of Afghanistan			Specifications of the fourth book of Iran		
book chapter	Headlines	Pages	book chapter	Headlines	Pages
1	Organisms	1-28	1	Alarm Science	1-4
2	Heat and	29-40	2	Mixtures in life	5-14
3	Light	41-54	3	Our daily energy	15-24
4	Cars	55-60	4	Electronic Energy	25-32
5	the earth	61-72	5	Heat and matter	33-40
6	Food	73-83	6	stones	41-50
7	Cleaning	84-91	7	Magnet in life	51-58
8	Diseases and its agents	92-104	8	Sky At Night	59-68
9	First Aid the environment	105-112	9	our body	69-74
			10	our body	75-82
			11	The invertebrates	83-90
			12	Variety of plants	91-98
			13	Habitat	98-1066
Totals		112	Totals		106

Table 2: Characteristics of the Fifth Book of Experimental Sciences of Iran and Afghanistan

Specifications of the fifth book of Afghanistan			Specifications of the fifth book of Iran		
book chapter	Headlines	Pages	book chapter	Headlines	Pages
1	Properties of living objects	3-14	1	Alarm Science	1-6
2	Human body building	15-32	2	The matter changes	7-16
3	Matter and its properties	33-45	3	Rainbow	17-24
4	Climate, Water and Air	46-55	4	A leaf from the history of the earth	25-34
5	The solar system	56-71	5	Body movement	35-44
6	Voice (Vocal)	72-78	6	What up?	45-52
7	Magnetism and its Properties	79-86	7	What up?	53-60
8	Electricity	87-99	8	Things get easier	61-66
9	Germs and aphids	100-116	9	Things get easier	67-76
10	Drugs or transplants	117-123	10	Precious soil	77-84
			11	Plant and eat	85-92
			12	From root to leaf	93-98
Totals		123	Totals		98

Table 3: Characteristics of the Sixth Book of Experimental Science of Iran and Afghanistan

Specifications of the Sixth book of Afghanistan			Specifications of the sixth book of Iran		
book chapter	Headlines	Pages	book chapter	Headlines	Pages
1	systems of the human body	3-15	1	Science Alarm	1-6
2	matter	16-30	2	My office story	7-12
3	Natural resources	31-42	3	paper factory	13-22
4	Energy	43-54	4	Traveling deep in the earth	23-30
5	Power	55-66	5	Dynamic Ground	31-36
6	Move	67-78	6	Exercise and Strength	37-44
7	Factors and Types of Sari Diseases	79-100	7	Exercise and Strength	45-52
8	Drugs and transplant	101-112	8	Let's plan to make it	53-68
9	Basic Science and Branches	113-114	9	Energy Travel	69-76
			10	Too small and too big	77-82
			11	Wonders of the Leaf	82-86
			12	Forest for Cast?	87-94
Totals		114	Totals		94

The research tools for analyzing the content of experimental science textbooks of fourth and fifth grades of elementary school in Iran and Afghanistan were compiled according to the components in a checklist. The checklist was based on

Plesk's Creativity Cycle Indicators. The categories and detailed descriptions of the components of the research tool are:

Table 4: Plesk Content Analysis Checklist (Kaveh & Hedayati, 2017) ^[12].

Components	Definition
Draw attention	concepts that create the learner's curiosity and sensitivity to the phenomenon or problem.
Targeted viewing	Subjects and materials that compel the learner to observe carefully
Extract concepts	Questions and themes that require the learner to analyze the ideas and identify the concepts and their constituents.
flexibility	Statements and questions that ask the learner to come up with varied ideas about the phenomenon or problem.
Zoom in	Topics that ask the learner to add something to the phenomenon or problem they are considering or make it stronger, louder, longer, and so on.
Zoom Out	Course concepts Hints and questions that require the learner to see the phenomenon or problem in question smaller, shorter, lighter....
Reverse	Questions or topics that ask the learner to consider the problem upside down.
Replacement	The themes that require the learner to conceive or consider the material, another process with attitude, emotions and others instead of the phenomenon or problem being addressed.
Combination	Concepts, implications, and items that require the learner to incorporate ideas, concepts, units, and so on.
Pay attention to details	Questions and concepts that ask the learner to pay attention to the characteristics and details of the phenomenon or problem
Reinforcement	Questions that ask the learner to formulate and tailor ideas.
assessment	Questions and concepts that put the learner at risk for judging and selecting ideas.
Practical application	Expectations within content as requests that encourage the learner to respond to creative ideas, new ideas and hypotheses.

Findings

Results of data analysis and comparison of the main components of creativity in the curriculum content of the fourth, fifth and sixth-grade science books in Iran and

Afghanistan, firstly, the frequency distribution and percentage of components of the Plesk Classroom Creativity Training Cycle are compared in a table and later analyzed It is mentioned.

Table 5: Comparison and analysis of data Frequency and Percentage of Components Based on Plesk's Creativity Training Cycle

Steps of Plesk's Pattern of Creativity	The Components of Creativity in the Content of the Curriculum of the Fourth Grade Experimental Sciences Book in Iran.			Elements of Creativity in the Content of the Curriculum for the Fourth Grade of Experimental Science in Afghanistan.		
	Components	Frequency	Percentage	Components	Frequency	Percentage
mental preparation	Draw attention	23	8	Draw attention	18	9/2
	Targeted viewing	43	15	Targeted viewing	13	6/7
	Extract concepts	48	17	Extract concepts	42	21/6
Imagination	flexibility	37	13	flexibility	26	13/4
	Zoom in	23	7	Zoom in	6	3
	Miniaturization	0	0	Miniaturization	0	0
	Reverse	0	0	Reverse	0	0
	Replacement	0	0	Replacement	0	0
Development	Combination	16	5/6	Combination	18	9/2
	Pay attention to details	14	4/9	Pay attention to details	10	5/1
	Reinforcement	25	8/8	Reinforcement	11	5/2
Action	Assessment	23	8	assessment	27	13/9
	Practical application	32	11	Practical application	23	11/8
total		281	100	total	194	100

In topics 13 chapters and 106 pages of the curriculum content of the fourth grade science fiction book Iran, all of the content in this lesson (281) has a Plesk creativity cycle, of which 17 percent are ready for concept extraction, 15 percent are targeted viewing, The flexibility component imagination was 13 percent in the dimension of the reinforcement component 8.8 percent in the operational phase of the component 11 percent application in practice; the other components accounted for the lowest percentage, respectively.

The content of Environment Book of the 4th grade

elementary school of Afghanistan, including 9 chapters and 112 pages in Regulated Units (194) of the components of Plesk's Cycle of Creativity was observed, most of which were in the mental readiness component of the Extraction of Concepts 21 percent at the stage. The flexible imagination is 13 percent, in the development dimension of the composition of the 13 percent and the dimension of the component of the evaluation, on the percentage.

Comparative table of Components of Creativity in the Content of the Fifth Class Experimental Science Curriculum in Both Countries

Table 6: Comparison and analysis of data Frequency and Percentage of Components Based on Plesk's Creativity Training Cycle

Steps of Plesk's Pattern of Creativity	The Components of Creativity in the Content of the Curriculum of the Fifth Grade Experimental Sciences Book in Iran.			Elements of Creativity in the Content of the Curriculum for the fifth Grade of Experimental Science in Afghanistan.		
	Components	Frequency	Percentage	Components	Frequency	Percentage
mental preparation	Draw attention	23	9/8	Draw attention	17	6/6
	Targeted viewing	28	12	Targeted viewing	23	9/8
	Extract concepts	34	14/5	Extract concepts	53	20/6
Imagination	flexibility	32	13/7	flexibility	18	7
	Zoom in	8	3/4	Zoom in	31	12
	Miniaturization	0	0	Miniaturization	1	0.3
	Reverse	0	0	Reverse	4	1/5
	Replacement	0	0	Replacement	1	0.3
Development	Combination	21	9	Combination	12	4/6
	Pay attention to details	8	3/4	Pay attention to details	17	6/6
	Reinforcement	30	12/8	Reinforcement	40	15/5
Action	Assessment	27	11/5	assessment	20	7/7
	Practical application	22	9/4	Practical application	20	7/7
Total		233	100	total	257	100

Among the topics in the curriculum content of Iran's Fifth Grade Experimental Science Curriculum, which consists of 12 chapters and 98 pages or educational goals (acquaintance with the subject of empirical sciences), the number of components of the Plesk Creativity Training Cycle (233) is the highest in the curriculum. The mental readiness extraction concept was 14/5 percent, the flexible imagery 13/7 percent, the component developmental reinforcement 15 percent, and the evaluation practice 11/5 percent. In the curriculum content of Afghanistan's fifth-grade Experimental Science Textbook in 10 chapters and 123 pages or educational goals (learners' knowledge of the subject of Experimental Science), the number of

components is assigned to the Plesk Creativity Training Cycle, most of which is at the mental readiness stage. Extraction of concepts 20 percent, in the magnification imagination 12 percent, at the component development stage reinforced 12/8 percent and at the evaluation practice stage, at 7/7 percent Analyzing the data, it can be seen that the number of creativity components in the content of the Curriculum of the Experimental Sciences of Afghanistan is 24 components and 25 pages more than the fifth grade of Experimental Science in Iran.

Comparative Table of Creativity Components in the Content of the Sixth Grade Experimental Science Curriculum in Both Countries

Table 7: Comparison and analysis of data Frequency and Percentage of Components Based on Plesk's Creativity Training Cycle

Steps of Plesk's Pattern of Creativity	The Components of Creativity in the Content of the Curriculum of the Sixth Grade Experimental Sciences Book in Iran.			Elements of Creativity in the Content of the Curriculum for the Sixth Grade of Experimental Science in Afghanistan.		
	Components	Frequency	Percentage	Components	Frequency	Percentage
Mental preparation	Draw attention	9	3/9	Draw attention	16	7/3
	Targeted viewing	30	13/1	Targeted viewing	20	9/1
	Extract concepts	45	19/7	Extract concepts	38	17/4
Imagination	Flexibility	25	10/9	flexibility	27	12/3
	Zoom in	15	6/5	Zoom in	9	4/1
	Miniaturization	0	0	Miniaturization	0	0
	Reverse	0	0	Reverse	1	0/4
	Replacement	5	2/1	Replacement	0	0
Development	Combination	16	7	Combination	24	11
	Pay attention to details	8	3/5	Pay attention to details	13	5/9
	Reinforcement	32	14	Reinforcement	29	13/3
Action	Assessment	21	9/2	assessment	31	14/2
	Practical application	22	9/6	Practical application	10	4/5
total		228	100	total	218	100

Curriculum Content The sixth chapter of Experimental Science in Iran, set in 13 chapters and 103 pages, contains (228) components of Plesk's Creativity Training Cycle, including the mental readiness component of Extraction of Concepts at 19/7 Percent, at the Flexible Imagination Stage. In the development phase, 10 percent, and practice, the component was the highest in the application of the

component in the practice of 14 percent. Components of Plesk's Cycle of Creativity in the Curriculum Content of the Elementary Science Course of Afghanistan's Elementary Education, which has a number of (218) components, arranged in 9 chapters and 114 pages, including concept extraction 17/4 percent, flexibility 12/3 percent, Strengths were higher by 13/3 percent and ratings by 14/2 percent.

Table 8: Data and Final Results Comparison of the Components of the Plesk Cycle of Critical Elements of Experimental Science in Iran and Afghanistan.

Country	The highest number and percentage of components observed in any country science textbook.									
	Class's	Number of active units	components	Frequency percent	components	Frequency percent	components	Frequency percent	components	Frequency percent
Iran	Forth	281	Extract concepts	48	Targeted viewing	23	flexibility	37	Practical application	32
				17		15		13		11
	Fifth	233	Extract concepts	34	flexibility	32	Reinforcement	30	Targeted viewing	28
				14/5		13/7		12/8		12
	Sixth	228	Extract concepts	45	Reinforcement	32	Targeted viewing	30	flexibility	25
				19/7		14		13/1		10/9
Afghanistan	Forth	194	Extract concepts	42	Assessment	27	Zoom in	26	Practical application	23
				21/6		13/9		13/4		11/8
	Fifth	257	Extract concepts	53	Reinforcement	40	Targeted viewing	23	Assessment	20
				20/6		15/5		8/9		7/8
	Sixth	218	Extract concepts	38	Assessment	31	Reinforcement	29	flexibility	27
				17/4		14/2		14/2		12/3

Discussion and Conclusion

The education system of Iran and Afghanistan is centralized, books, instructions, bills, and laws of the education system are sent from one source to other schools and training centers, and curriculum development and content in the centralized system are in the focus of central education system operators. In this system, student textbooks, tutorials, and teacher evaluation books are considered equally. The field of education in Iran has been better fostered and has taken into account remote areas, including educational conditions, school location of residential neighborhoods, an increase in the number of students in the classroom, the ratio of pupils to teachers, lack of school materials and laboratory equipment, and restrictions. School sports areas, insufficient teacher skills in teaching and learning objectives, arranging exam questions, applying assessment methods, emphasizing information banking on action and potential learning, emphasizing textbooks as a highly credible source, relying too much on the content of the curriculum To practical work in science, encourage more use of the textbook. Therefore, teachers pay attention to the textbook and emphasize their textbook content.

The overall purpose of the study is to compare the creative components in the curriculum content of the empirical science textbooks of Iran and Afghanistan. The methodology of this study is qualitative and principal component analysis based on Plask's Creativity Training Cycle Model (Plask, 1997). The dimensions of the Plesk Creativity Training Cycle have been used in studies by Uoryan (1999) and Pamravi (Pamravi, 2008) (Qasami and Jahani, 2009) [20] as quoted (Kawa and Hedayati, 2017) [12]. The results show that in the content of the curriculum of the experimental science textbooks of both countries, the extraction of the concepts that are considered in the mental readiness phase of the Plesk creativity training cycle is higher than the other components.

The findings indicate that the content of the curriculum on educational banking and memory is now emphasized and that other aspects of creativity are less applied and developed. The findings of this research section are in line with the results of the study (Kawa and Hedayati, 2017) [12] in the Secondary School Biology Book because the findings of the above research focus more on memory, curriculum content, and understanding of memory and growth contexts. He did not respect thinking and creativity. The results are in line with the findings of the study (Salimi and Osara, 2013) [23], as the Second Experimental Guidebook provides fewer

conditions for creativity. The content of this book focuses on the levels of cognitive memory and convergent thinking for the level of creativity of Gilford, but other levels including divergent thinking and evaluative thinking have not been addressed. Purposeful observation is one of the components of the mental readiness dimension which in this study has the highest content in the curriculum content of the empirical sciences. This part of the research is similar to the research result (Salimi and Osara, 2013) [23] because it delivers thoughtful and purposeful observation of students' tables and images, which is one of the key tools for nurturing creativity.

The results show that the components of the Plesk Creativity Training Cycle in the content of the fourth and sixth-grade textbook curriculum in Iran increased by 4 and 6 components compared to the experimental science textbooks in Afghanistan, which is similar to the study findings (Qasami and Jahani, 2009) [20]. Because the curriculum content of the empirical sciences of Iran, which now holds a prominent place in elementary education, contains a set of well-organized content and well-known methods that can help creativity while reducing the amount of creativity components in the content of the empirical science curriculum. Elementary Evil does not provide the opportunity for creativity, problem-solving, and knowledge of theory. The findings of the study are devoted to the third and fourth-tiers of the application of practice and evaluation in the content of the experimental science curriculum. This result is similar to the research findings (Diki, 2013) [8] as students' hands-on learning and experimental activities lead to the development of ideas, solutions to problems, and creative activities.

Observing the components of the Plesk Creativity Training Cycle in the content of the empirical science curriculum can foster creativity and assist in creative learning. Curriculum specialists and educational program executives should pay particular attention to compiling the content of the elementary science experiential curriculum to foster creativity in students.

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