

Evaluation of Primary School Experimental Science with Respect to Elements of Critical Thinking from Primary Teachers' Views

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Abstract

The aim of this study was to assess primary school experimental science teachers' views on the basic elements of critical thinking in education is 2014-2013. The purpose of the study, applied for a description of how data collection survey. The study population consisted of 141 primary school teachers in the city seal, cadmium 2014-2013 school years using a stratified random sampling of 122 people were selected by Morgan. Instruments included a questionnaire and notes are. Validity was confirmed by experts and its reliability using Cronbach's alpha method 0.93 was calculated. The results show that three components-the components of such a study (evaluating evidence and testimony, judgment, analysis and evaluation) views teachers as medium components (reasoning, rational, asking questions) evaluated at the appropriate level. There is significant difference between teachers' views of gender among the components of the arguments and evaluate evidence and testimony but in other factors between male and female teachers and basic educational perspective, there was no significant difference between the mean scores of components according to Friedman test case.

Keywords: *critical thinking, experimental science, elementary education*

Introduction

Education as the basic unit of progress is and how to think and learn is the most striking feature of humans. The most effective component of the education system is an element of speculation. The growth and development of education and training communities in different communities is an essential factor and according to the criteria and considering new approaches to thinking in the learning process, teaching content is essential and inevitable. Thinking is such a massive level of attitudes, Robert Ennis (1985) has argued that the idea of two levels of attitude and character is drinking. Accordingly, pursuant to the attitudes that include tolerance of ambiguity and stimulate our thought, willingness to suspend judgment and respect for evidence and proof when arguing and a willingness to amend or alter judgment universal that there is adequate evidence and respect for the truth is (Robert Ennis quoting Shabani, 2012, p.55). Thinking in dealing with abnormal situations are unusual situation begins to illuminate the origins of the person's position and specifies basic questions or problem and then solve it deals with the problem solving process (Shariatmadari, 2003, p.19). With regard to the education of people who



thought the purpose of education is the final product of education should be mind-probes. According to the thinking of the course is considered as one of the key issues, why the lack of attention to this matter cause people to be creative and non-oriented surface and the quality of the ideas and critical thinking essential factor is significant. Teachers should focus on the development of skills in using the tools of thinking are better than nothing. Should reach a stage where students can intellectual power; the basic problem is that the goal should be to attain the thinking skills used; understand (Translator, Shariatmadari, 2010, p 108). Critical thinking means finding the kind of knowledge and insight which could be consistent with the findings of science, opportunity, freedom of the mind is that makes the ability to discuss and comment in person. Critical thinking is the thinking of the mind creative thinking is the process of understanding the problems, issues, lack of information and factors in place, guessing and making assumptions about these deficiencies, evaluate and test hypotheses and guesses; amended and re-evaluate them and finally deliver the results. (Haeri, M., 2003, p 18). So, to acquire the skills of our tiny children (elementary school students) is imperative and essential. Using the tools of thinking in life causes progressive ideas and art that is quickly adjusting to life provide for others among all these conflicting facts or factors is unrealistic to think and apply the analysis and assessment of evidence to choose the right path and achieve their academic and personal growth and increased self-provided. Intellectual order, and out of thinking and make certain frame of mind that leads to thinking about the phenomena and appropriate communication is requirement that must be included in the contents of formal and elementary schools and basic courses in basic science as well as new approaches to science is important; Greater need to develop critical thinking in which students felt training and utilization of critical components and also with regard to the particular change in experimental sciences in recent decades and especially by the addition of a new age for primary education and intellectual growth of students and get out of the sixth grade students from concrete thinking to abstract thinking skills necessary to implement this more visible than before. Note the ring as one of the basic education curriculum and programs of education and training at the macro level thinking skills, in particular, critical thinking is the strength which can have a thriving education should be the inevitable necessity, is considered. Facione (2006), researchers in critical thinking, it is described Rayk national goal of educating citizens. Vayns, Lip man, Paul also thought educating people who believe the purpose of education. The daily success, critical thinking, the real difference between success and failure are successfully assists per Carrera boundary (Ndolyna, 2001). The space for students to develop critical thinking in science education is the foundation subjects is (Physics, Chemistry, Biology and Earth Science). It should be noted that the skills that are used in science class (Observing, hypothesizing, infer, question, etc.) is closely related to critical thinking skills and components. Every nation has a thoughtful student education and training system the thoughtful and effective products to the society and the labor market in the cultural dimension and the economic dimension of education delivered. So according to science class in primary section, the increase due to the growth of students in different aspects and approaches to learning and how the components of critical thinking is imperative LIFE; because they rely on information alone, one of the most BASIC process of learning problems that can be converted into something smooth and uniform. The development of critical thinking in high-school factor that can cause the development of personal, social and academic learning is flourishing. Research is being conducted on this topic including:



Peirovi (2012), Handbook of quantitative analysis of how the social studies curriculum at the secondary level components program has done. The findings suggest that attention to critical thinking in the social studies curriculum approved goals of critical thinking in regard to the content of the book. Alikhani (2012) study examined the effect of metacognitive instruction on critical thinking skills of female students from the perspective of high school teachers the city of Tehran District 7. The results showed that the method of teaching students critical thinking skills, metacognition, and there is a significant relationship. Also, between the component Comments students' metacognition and critical thinking in terms of degree and teaching experience, there is no the only significant difference between both components are the same age. Khwaja A. (2010) study examined the role of critical thinking in contemporary history curriculum in secondary schools has done. Critical thinking procedure for selecting components and for descriptive analysis of Contemporary History curriculum and the content analysis method is used. The findings suggest that greater attention to the content of the textbook is approved Critical thinking goals, the percentage distribution of the components of critical thinking in the approved purposes and in textbook content does not fit well due to the cognitive level, about three times the rate of emotional and functional considering that this situation is not appropriate to teach critical thinking, Way (2010) conducted a study to evaluate the effect of critical thinking skills, speaking skills of learners in the Iranian capital, had done. The results indicate that explicitly teaching critical thinking has a significant positive effect on the learners' speaking skills. Through qualitative methods, participants' attitudes toward their training in critical thinking during the interview were studied. The results show that explicit teaching of critical thinking in English class can have a profound impact on students learning the language. Hashemi (2009), in this research to investigate the use of critical thinking in social science textbooks from the perspective of teachers in the province to provide a proposed model for the regulation of social science books, designing content has done. Our results show that explicit skills, evaluation, evidence, expectations, analysis, evaluation and interpretation, and other undesirable level skills are desirable level. Tsioy and Gaav (2007), a study of the relationship between students' critical thinking seminars the progress and development of students to think critically examined. The results showed that the method is effective seminar on the development of critical thinking. The relationship between the content of the seminar, important implications of the development of critical thinking and active learning curriculum and student information is shown. Agnes and Mary (2005), the research examines strategies for overcoming obstacles that impede the facilitation of critical thinking in the development of nursing in North Africa and identified the following barriers: The lack of teachers, teaching methods and assessment of learners' thinking does not facilitate this process; teachers to change negative attitudes and resistance to change, the process of choosing an inappropriate and poor educational background of the students did not facilitate critical thinking; inadequate socialization, culture and language incompetence. These findings indicated that a model of critical thinking in all aspects of nursing teachers needs training. Sheikh and Inabi study how to increase considerably in middle school mathematics teachers to think critically and to compare the perceptions of teachers before after training began. Details of the order of 12 schools in 1998 and 2004 were collected through interviews with 47 teachers of mathematics. The results showed that critical thinking in high school math teachers do not pay much attention. Despite fifteen years of educational reform passes, but the majority of the teachers' understanding of critical thinking is not enough although most teachers claimed that they teach critical thinking, more than half of them are able to offer a



convincing justification for not and any situation that could lead to critical thinking math classes offer. Another study, Bell and colleagues (2002) conducted a six year process of concentration was focused on group learning strategies and aims to teach them how to work and deepen the analysis and the use of critical thinking (nursing students) in dealing with issues that were encountered in the clinical situation. Based on its investigation concluded the practical knowledge and advice (theoretical) students have been strengthened. Haymr (2002), a study of gifted students, the positive effect of philosophy education to children in critical thinking, and reasoning, conceptual, philosophical study showed students. Davidson (1994), in their study of critical thinking in Japanese society to the limits of ideological barriers (lack of a viable philosophical tradition to argue for the importance of concepts and vocabulary, and lack of faith reveals), social and psychological constraints (compliance point of view of authority and power in a high-class society of conformity of snow outside), breeding restrictions (the Japanese education system and trends in foreign language teaching) is described. Paskarl (1999), the study examines the changes in critical thinking over the course of a year between matched groups of students visited the university and the university. Results showed that students who attended the university for one year had higher scores on critical thinking at the university than students who were not in line. Lippman (2004), their study is the first evaluation of the Philosophy for Children was recognized and after a pilot project to test in the control group were randomly paired together. This study showed that a nine-week training program can influence not only on the reasoning results, but on reading and critical thinking children. The results of this study, no significant difference in levels between the control and experimental groups showed that in two and a half years later. Analysis of Silver (1986), about the results of the national tests (National Assessment of Education Progress) made a convincing case that shows how students with homework Education are a car without thinking about their stumbles (Marizno and others, translated Ahghar, 2001).

The major research questions:

- 1- What are the Primary teachers' views about the use of reasoning component in elementary experimental science in the Mohr city?
- 2- how are elementary teachers' views about the use of evaluate the evidence and testimony components in experimental elementary science in the Mohr city?
- 3- What are the Primary teachers' views about the use of interpretation component in elementary experimental science in the Mohr city?
- 4- What are the Primary teachers' views about the use of proper judgment component in elementary experimental science in the Mohr city?
- 5- What are the Primary teachers' views about the use of logical component in elementary experimental science in the Mohr city?
- 6- What are the Primary teachers' views about the use of analysis and assessment component in elementary experimental science in the Mohr city?
- 7- What are the Primary teachers' views about the use of asking question component in elementary experimental science in the Mohr city?
- 8- Is there any difference between male and female elementary teachers' views about the use of critical thinking component in elementary experimental science in the Mohr city?
- 9- Is there any difference between the difference primary teachers' views about the use of critical thinking components in elementary experimental science in the Mohr city?



Method:

This study assesses primary school science focuses on the components of critical thinking and elementary teachers' views on this matter investigated; therefore, the purpose of the research and how the data collection descriptive - survey. The population of this study, all primary school teachers in the 2014-2013 school years in Mohr city primary schools is taught. The population was composed of 141 patients with 122 randomly selected subjects. The data obtained through the questionnaire and its validity is obtained through a survey of experts. The reliability of the questionnaire using Cronbach's alpha was calculated 0.93 on a number of statistical samples.

The findings:

The first research question: What are the primary teachers' views about the use of reasoning component in elementary experimental science in the Mohr city?

table 1: descriptive results of the use of reasoning component in elementary experimental science

Descriptive indices				Frequency%					Question
SD	Mode	Middle	Mean	Very much (5)	High (4)	average (3)	Low (2)	Very low (1)	
0.80	4	4	3.8	18.3	59.6	15.4	5.7	1.0	Use of evidence
0.96	3	3	3.5	15.4	33.7	38.4	9.6	2.9	Taking advantage of the reasoning
0.76	4	4	3.6	12.5	44.2	38.5	4.8	0.0	Reasonable express concepts
0.87	3	3	3.3	7.7	34.6	40.4	16.3	1.0	Defending the faith
0.81	4	4	3.6	9.6	53.8	30.8	2.9	2.9	Correct reasoning
0.86	4	4	3.6	12.7	45.2	32.7	7.9	1.6	Reasoning component

The results table shows that 1.6% of primary school teachers in the use of components of the dynamics of learning in the city Lamerd very low, 7.9% as low, 32.7% moderate, 45.2% as much as 12.7% in too much has been evaluated. These results suggest that the views of teachers, the use of elements of reasoning in basic science level was high. The t-test results showed that the differences between male and female teachers in primary schools to use the city seal on the element of reasoning, there is; but there is no significant difference between the views of teachers in various base. The results obtained in this study with the results Tarighat (2010), Seidi (2009), Hashemi (2009), Tsyvy and Gaav (2007) and Cummings (1981) is consistent.

The second research question: how are elementary teachers' views about the use of evaluate the evidence and testimony components in experimental elementary science in the Mohr city?



table 2: descriptive results of use of the evaluate the evidence and testimony components in experimental elementary science

Descriptive indices				Frequency%					Question
SD	Mode	Middle	Mean	Very much (5)	High (4)	average (3)	Low (2)	Very low (1)	
0.81	4	4	3.8	17.3	49.0	28.8	3.8	1.0	Commenting
0.80	3	3	3.2	1.9	33.7	43.3	20.2	1.0	Provide the reason for the criticism of Contents
0.79	3	3	3.1	2.9	29.8	45.2	22.1	0.0	Verify the contents
0.77	3	3	3.1	1.9	28.8	53.8	12.5	2.9	Reason and argument in presentations
0.88	3	3	3.1	1.9	33.7	42.3	17.3	4.8	Challenging ideas
0.62	3	3	3.3	0.0	37.5	53.8	8.7	0.0	Evaluation of the activities of others
0.78	3	3	3.3	3.8	33.7	48.1	13.5	1.0	Due to the different approaches and issues
0.77	3	3	3.4	4.8	39.4	45.2	9.6	1.0	Monitor the activities of others
0.84	4	4	3.5	9.6	42.3	37.5	9.6	1.0	Assessment Statement
0.51	3	3	3.3	4.9	36.4	44.2	13.0	1.4	Component to evaluate the evidence and testimony

The results of this examination indicates that 1.4% of the teachers in the use of evidence evaluation component and the reasons for the elementary schools in the city Lamerd very low, 13% as low, 44.2% moderate, 36.4% as much as 4.9% as evaluated too. This suggests that the views of most teachers, the use of components, evaluate the evidence and testimony in the basic science level was moderate. The t-test results showed that the differences between male and female teachers in primary schools in the city seal element in the assessment of the evidence and testimony, there is a significant difference; but there is no significant difference between the views of teachers on the basis of the results obtained in this study with research results of Peirovi (2012), Hashemi (2009), Ainaby and Sheikh (2004) and Parskarl (1999) is consistent.

The third research question: What are the Primary teachers' views about the use of interpretation component in elementary experimental science in the Mohr city?

table 3: descriptive results relating to interpretation component in elementary experimental science

Descriptive indices				Frequency%					Question
SD	Mode	Middle	Mean	Very much (5)	High (4)	average (3)	Low (2)	Very low (1)	
0.77	4	4	3.7	10.6	56.7	26.0	5.8	1.0	Commentary Blog
0.82	3	3	3.4	7.7	37.5	43.3	10.6	1.0	Evaluation of uncertainty
0.70	4	4	3.6	6.7	55.8	31.7	5.8	0.0	Commentary Comments
0.79	3	3	3.6	4.8	36.5	44.2	12.5	1.0	Exact Inference
0.89	3	3	3.2	6.7	29.8	45.2	15.4	2.9	Relying on scientific principles
0.78	4	4	3.5	7.3	43.3	38.1	10.0	1.2	Component interpretation



Results indicate that 1.2% of primary school teachers in the use of the element in the interpretation of the city Lamerd at the very least, 10% in the low, 38.1% moderate, 43.3% and 7.3% as much as many have found. This suggests that the views of teachers, the number of elements in the interpretation of the basic science level was high. The t-test results showed that the differences between male and female teachers of different grade teachers in primary schools to use the city seal on the element of interpretation, there is no significant difference. The results obtained in this study with findings from studies Alikhani (2012), Tarighat (2010), Seidi (2009), Hashemi (2009), Alipur (2004), Rabl et al (2002) and Lipman (1970) is consistent .

The fourth research question: What are the Primary teachers' views about the use of proper judgment component in elementary experimental science in the Mohr city?

table 4: descriptive results relating to the use of proper judgment component in elementary experimental science

Descriptive indices				Frequency%					Question
SD	Mode	Middle	Mean	Very much (5)	High (4)	average (3)	Low (2)	Very low (1)	
0.70	3	3	3.3	2.9	31.7	56.7	7.7	1.0	Reasonable judgment
0.69	3	3	3.3	1.9	33.7	54.8	8.7	1.0	Unbiased judgment
0.82	3	3	3.2	2.9	37.5	39.4	19.2	1.0	Presented opposing views
0.68	4	4	3.8	13.5	59.6	24.0	2.9	0.0	Judgment
0.73	3	3	3.4	3.8	41.3	46.2	7.7	1.0	Having insight
0.71	3	3	3.4	5.0	40.8	44.2	9.2	0.8	Element of judgment

The results suggest that 8% of elementary school teachers in the use of the element of judgment Lamerd city at the very least, 9.2% as low, 44.2% moderate, 40.8% as much as 5% in the too much has been evaluated. These results suggest that the views of teachers, the use of components judgment in basic science level was moderate. The t-test results showed that the differences between male and female teachers of different grade teachers in primary schools to use the city seal on the element of judgment, there is no significant difference. The results obtained in this study with the following research results (2012), Seidi (2009), Hashemian Nejad (2001), Shabani (2001), Tsyvy and Gaav (2006), Rabl et al (2002) and Haymr (2002), in line and the results of eunuchs born (2010) and Ali Pur (2002) is countercurrent.

The fifth research question: What are the Primary teachers' views about the use of logical component in elementary experimental science in the Mohr city?



table 5: descriptive results of the use of logical component in elementary experimental science

Descriptive indices				Frequency%					Question
SD	Mode	Middle	Mean	Very much (5)	High (4)	average (3)	Low (2)	Very low (1)	
0.74	3	3	3.4	5.8	36.5	50.0	6.7	1.0	Comment reasonable
0.85	4	4	3.5	9.6	41.3	37.5	10.6	1.0	Logical thinking
0.83	4	4	3.8	19.2	53.8	20.2	5.8	1.0	Supporting facts
0.85	4	4	3.5	9.6	41.4	39.4	7.7	1.9	Logical Comprehension
0.79	4	4	3.7	12.5	48.1	33.7	4.8	1.0	Tolerance of others
0.83	4	4	3.8	20.2	51.0	23.1	4.8	1.0	Acceptance of the views of other
0.81	4	4	4.0	27.9	50.0	17.3	4.8	0.0	Acceptance of the idea of the
0.79	4	4	3.7	15.0	46.0	31.6	6.5	1.0	Logical component

The results of this question show that 1% of the teachers in the use of logical component in primary schools in the city Lamerd very low, 6.5% as low, 31.6% moderate, 46% as much as 15 % as too many have found. This suggests that the views of teachers, the use of the logical component of the basic science level was high. The t-test results showed that the differences between male and female teachers of different grade teachers in primary schools to use the city seal on the element of reasonableness, there is no significant difference. The results obtained in this study with findings from studies Alikhani (2012), Tarighat (2010), Seidi (2009), World (2001), Shabani (1999) and Ainaby and Sheikh (2004), Paul Valdr (200) and Lipman (1970) and is consistent with the findings of Khwaja Zadeh (2010) is countercurrent.

The sixth research question: What are the primary teachers' views about the use of analysis and assessment component in elementary experimental science in the Mohr city?

table 6: descriptive results relating to the use of analysis and assessment component in elementary experimental science

Descriptive indices				Frequency%					Question
SD	Mode	Middle	Mean	Very much (5)	High (4)	average (3)	Low (2)	Very low (1)	
0.72	4	4	3.5	6.7	47.1	41.3	3.8	1.0	Problem-finding and decision-making
0.87	3	3	3.5	13.5	31.7	47.1	5.8	1.9	Survey Solutions
0.76	3	3	3.4	8.7	30.8	54.8	4.8	1.0	Thinking to aspects of the problem
0.94	3	3	3.5	16.3	32.7	37.5	12.5	1.0	Collection of information
0.80	3	3	3.5	11.3	35.6	45.2	6.7	1.2	component Analysis and Evaluation



Results indicate that 1.2% of primary school teachers in the use of component analysis and evaluation Lamerd city at the very least, 6.7% as low, 45.2% moderate, 35.6% as much as 11.3% as too much has been evaluated. This suggests that the views of teachers, the use of component analysis and assessment of the basic science level was moderate. The t-test results showed that the differences between male and female teachers of different grade teachers in primary schools about the use of the city seal element analysis and evaluation, there is no significant difference. The results obtained in this study suggest that compliance with the study (2012), Tarighat (2010), Seidi (2009), Shabani (1999), Lipman (2004), Ainaby and Sheikh (2002), Allen (1998), in line and the results of Khwaja Zadeh (2010) Countercurrent professionalism.

The seventh research question: What are the Primary teachers' views about the use of asking question component in elementary experimental science in the Mohr city?

table 7: descriptive results relating to the use of asking question component in elementary experimental science

Descriptive indices				Frequency%					Question
SD	Mode	Middle	Mean	Very much (5)	High (4)	average (3)	Low (2)	Very low (1)	
0.89	3	4	3.7	25.0	27.9	42.3	4.8	0.0	Create a logical question
0.72	4	4	3.8	12.5	54.8	28.8	3.8	0.0	The spirit of inquiry
0.79	4	4	3.9	26.0	51.9	17.3	4.8	0.0	Listen Analytical
0.75	4	4	3.8	13.5	57.7	23.1	5.8	0.0	Methods of inquiry
0.82	4	4	3.8	17.3	49.0	29.8	1.9	1.9	Analysis of responses
0.92	3	3	3.5	13.5	33.7	38.5	13.5	1.0	Critical questions
0.67	4	4	3.5	2.9	49.0	41.3	6.7	0.0	The ability to set questions
0.82	3	4	3.6	11.5	40.4	42.3	3.8	1.9	The question of subject matter
0.81	4	4	3.7	15.3	45.6	32.9	5.6	0.6	component question

The results of this examination indicate that 6% of primary school teachers in the use of the element in question Lamerd city at the very least, 5.6% As low, moderate 32.9%, 45.6% and 15.3% as much as many have found. These results suggest that the views of teachers, the use of questions in science component elementary level was high. The t-test results showed that the differences between male and female teachers in primary schools about the use of the city seal element in question, there is no significant difference; but there is no significant difference between the views of teachers in various base. The results obtained in this study with the following results (2012), Seidi (2009), Hashemi (2009), World (2001), Ainaby and Sheikh (2002), Rabl et al (2002), Haymr (2002) and Lippman (1970) were consistent with the findings of Khwaja Zadeh (2010) is countercurrent.

Question Eight: Is there any difference between male and female elementary teachers' views about the use of critical thinking component in elementary experimental science in the Mohr city?

To compare the attitudes of teachers about the use of each component of critical thinking in science class T-test was used. The results suggest that the p-value of component of the argument,



there is evaluating the evidence and statements 0.018, 0.044, 0.403, appropriate judgments 0.530. Reasonableness of the 0.444, Analysis and evaluation of the 0.283 and 0.927 question is with regard to sig 0.05 P-value for the two elements of reasoning and evaluate the evidence and testimony was less than 0.05 the differences between men and women, and there is, other factors, higher reasons than 0.05 show that there is no significant difference between the views of male and female teachers. Nine research questions: Is there any difference between the difference primary teachers' views about the use of critical thinking components in elementary experimental science in the Mohr city?

To compare the different approaches by primary teachers about the use of any components of critical thinking in science class T-test was used. The results suggest that the p-value component of the 0.393 arguments, evaluate evidence and statements of 0.106, critical thinking 0.837 appropriate judgments 0.729 reasonableness of the 0.673 Analysis and evaluation of the 0.369 is 0.231 examinations.

Since the p-value greater than 0.05 is obtained, it can be concluded that in none of the cases, the test is not significant. So the differences between teachers with different teaching based on the use of basic components discussed in empirical science there is no significant difference. Compare and rank components using the Friedman test components of Friedman rank test were compared with each other. The test results are listed below:

Table 8: comparison of mean scores of components and the test results using the friedman test

p-value	V Value	Degrees of freedom	Number	Average Rating	Components
0.000	99.35	6	104	4.58	Reasoning
				2.67	Evaluate the evidence and testimony
				3.73	Interpretation
				3.27	Judgment
				4.91	Rationality
				3.98	Analysis and Evaluation
				4.86	Question

We observed that the obtained p-value less than 0.05, so we can conclude that the average rank of the components studied, there are significant differences. Lowest level, the second component of the "assessment of the evidence and testimony" is equal to 2.67 is obtained. The maximum value of the average rank as the fifth element of "reasonableness" is equal to 4.91 obtained on the basis of the results table components can be ranked as follows:

- First Rationality
- Second question
- Third argument
- Four: Analysis and Evaluation
- Fifth, the interpretation
- Sixth judgment
- Seventh: Evaluation of evidence and statements

Conclusion:

This study assesses the science class on critical thinking in light of the components (reasoning, question, interpret, and evaluate the evidence and testimony, and the reasonable judgment of



Analysis and Evaluation) has been investigated. The results of the research questions and components based on a questionnaire survey shows that in three of the components (evaluating evidence and statements, judgment, analysis evaluating) the components in teachers' views average (ratiocinate, reasonable, question) level was high. The importance of education as an institution that families can then scholars, critics, and scholars develop is obvious to everyone. The school and classroom learning and thinking skills that education has had little success in these matters, for the purposes of the traditional model, children are required to read and maintain a predetermined material and pass the exam and the emphasis on education policy and planning memory and the lack of effective fundamental movement to change this situation and solve problems in the educational system and its underlying this study is essential. The study aims at evaluating science class in terms of how the critical thinking outcome components. Science class is mixed specifically for the growth and development of students skilled in asking questions, inquiry learning, curiosity, reasoning and discovery and, that is the daily change in the course of the last few years. But some will not moderate or good results in the above-mentioned components. One of the reasons is that I have a good grasp of these skills exist necessary to enable it to be integrated with critical thinking and the development of students' critical thinking provided. Each of the components must be properly trained to think these components are properly trained and have the space and facilities to be provided teachers and schools can have their teaching and the students are thinking. If we teach critical thinking, and communication between the techniques and skills used in science class to the point where we must make having extensive knowledge in the use of teaching methods for different age groups and by different teachers in primary school has many applications and the application of critical thinking skills in this course is this activity is made possible due to the practical skills to analyze and interpret science to find there. Critical thinking in different disciplines has different ways of further development. But do not be a fixed agenda for education in critical thinking in all disciplines issued. But most experts agree that the discussion and exchange of ideas and problem solving, critical thinking skills are best grown. Biological and physical science class the world around us that can be the subject of history, art, geography, biology, chemistry, physics and geology or any other field, and scientific methods of observing, predicting, interpreting data, research and ... in the study, all subjects are used and on the subject of the above cases apply the same critical thinking are essential. The student is able to manipulate the components of critical thinking skills in science class and science class is learning to be successful otherwise, do not get out of her memory may be reserved for a period of little or no use for him. Education is the best time to learn the use of inquiry and analysis skills taught in each logical connection to the facts and concepts focus on productivity and evidence exist. When students learn in the course of the novel concepts are needed have the ability to analyze and select the appropriate and the extension of the concepts and ideas in pursuit of the concepts is achieved. After all the issues related to the student who are critical thinking and conceptual thinking trained indirectly benefited. So when the learner is doing any activity is based on the application of skills and attitudes. It can be said that he is learning science and other science subjects to bring this high dependence and that's why as much as possible to the way teachers teach different subjects in a single elementary school use education is also important to work directly with the students' critical thinking, including questioning and examining evidence related. Learning skills is essential for sustainable learning in general education courses per person must gain skills for learning. Then he learned the ways of learning the purpose of education in a public school where students



can learn at their own logical path to achieve the objective analysis and evaluation of critical thinking. We note that in science class should first affection of the students towards a concept and issue provoked. And then the discussion and examination of critical thinking and questioning statements and chase to achieve the desired result. Based on the above topics in science class, if the student can move to the side of thinking that could be a class-based exercise instead of taking the concepts and the question of the importance of student-centered and placing students in learning situations implies. Elementary students are growing slowly and gradually learning the basics of thinking as well as an overview and consider the interests of the student and the teacher's art is undeniable, it is also noteworthy that science class due to differing concepts and approaches that should create interest in the minds of students and applying the interest properly, an art teacher. Terms of teachers in primary schools with different academic and experiential certain circumstances, an important point to consider is not to be expected primary school classrooms to discuss the desirability of placing students in learning to think critically is provided; more content courses, especially in science class, but the direction of the field makes teachers to engage in discussion, especially in higher grades.

Suggestions:

Dimensions of the issues and topics covered in science class further develops the students' ability to analyze the ecological, so should be provided to students in all aspects of the underlying issues in science, according to the provided context for the development of critical thinking and space science classes that students can easily hear each other's opinions and analyzing and then logical reasoning, judgment, and to reject or approve comments are appropriate. Students learn critical thinking skills in science class are very different from each other. Or in other words, with each revealing individual differences in skills and abilities as well as knowledge and understanding, and this causes thinking skills in all students learning at a pace and a reasonable course not. Therefore, to consider and develop critical thinking skills to the real needs of the student's first and then look to their individual differences. Or other critical thinking skills for all students in a classroom or even a school of thought to create, applying thinking skills in an atmosphere that is possible to excite a spirit of inquiry in students and to develop the thinking skills of interpretation and critique the reasoning does not provide. In order to develop the thinking skills not only in the classroom but also in the whole school environment for students to learn the spirit of inquiry, criticism and judgment and ask questions about them and link the classroom to real-life students.

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