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Effectiveness Of Cognitive Apprenticeship Model Of Teaching On Life Skills Under Selected Categories Of Components – Creative Thinking Among Secondary School Students

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Abstract: Cognitive Apprenticeship Model (CAM) of teaching is an instructional design, best suited for mastering the Life skills under the selected categories of components -Creative thinking in content area of study. Education is life skill training. Life skills development is the one of the ultimate objectives of education. In order to achieve this general objective of education it should be imparted through the best suited models of teaching. In the present scenario, the investigator intends to study Cognitive Apprenticeship Model of teaching on enhancing Life skills under the selected categories of components -Creative thinking. For the present study the investigator adopted quasi experimental method and selected two intact classrooms consists of 34 students in Experimental group and 34 students in Control group. Mean, Standard deviation, t test, ANOVA and Analysis of co-variance (ANCOVA) were the statistical techniques used for the study. The study disclosed that Cognitive Apprenticeship Model of teaching enhances Life skills under the selected categories of components -Creative thinking among secondary school students.

Key Terms: Creative Thinking, Life Skills, Cognitive Apprenticeship Model.

Introduction

Education enables to realize the true significance of life. It enables one to be self-realized by removing darkness and shattering illusion. Education frequently takes place under the guidance of educators, but learners may also educate themselves. It can take place in formal or informal settings. Also, any experience that has a formative effect on the way one thinks, feels or acts may be considered educational. Educators frequently made use of variety of methods to impart the content knowledge to adolescents. Frequently used methods of teaching include discussion, lecture, and seminar. All these methods of teaching help to knowledge acquisition of adolescents.

Our education system lays optimum focus on the acquisition of knowledge rather than

acquisition of skills, attitudes and values. Knowledge without utility is futile. Knowledge should lead to action. It should change the outward behavior of a person. It should enable a person to lead a meaningful and worthwhile life. Knowledge should be digested and should be part parcel of ones' daily life. Life skills are skills, strengths and capability of an individual to face problems of life and tackle effectively and happily go about. Here comes the importance of training of students in essential skills. It cannot be achieved through the traditional method of class room teaching. The investigator finds the solution from the concept of cognitive apprenticeship. It is a method of teaching where a master of a skill teaches that skill to an apprentice. It may best suit for Life skills under selected categories of components -Creative thinking, attainment of the students. The Cognitive Apprenticeship Theory is product of Constructivist approaches to human learning. It can be defined as a cognitive or metacognitive learning.

Education should foster creative thinking among secondary school students. The creative thinking skills stands among the foremost life skills and work skills within the 21st century. It is critically preliminary ability of world citizens in diversified societies.

Need and Importance of the study

Human resource development at present stresses the promotion of creative thinking ability. Creativeness makes someone move to do different perceptions, different concepts, and different points of entry. Various methods and techniques can be used to train children in creative thinking. It includes brainstorming, a bridge process flow analogy ect. Creativeness has much to do with perception to place forward different views regarding any topic. The various views are independently produced. In this sense, creativeness has got to do with exploration. While in true sense perception has got to do with exploration.

The world and society are progressing at a remarkable pace. We have to equip our younger generation with the ability to adapt to this trend, not to hold back. We will achieve great success by facing challenges and responding to them with a new way of thinking and self-confidence. The capacity to apply creative thinking in both a digital and non-digital environment has become a characteristic of successful people nowadays. In the 21st century Information technology has got its prime importance. Innovative thinking, problem-solving, or critical thinking ability are the critically preliminary ability of world citizens in diversified societies. Human resource development in present years therefore stresses the promotion of creative thinking ability.

Creativity points to the capacity for coping with a given problem in authentic ways. Such capacity aims at a specific situation and problem from different perspectives. The idea of Creativity goes beyond creating out of nothing since a new idea or thought is often a variation and version of an older thought or a combination of thoughts known or possessed previously. Creativity is synthesizing previous thoughts and redefining previous thoughts.

Creativity is a basic skill. It involves in all aspects of human beings' life and the evolution of human beings. Creativity points towards being sensitive to problems, insufficiencies, shortage of information, nonexistent elements and incompatibility; identifying challenges, seeking for solutions, estimation and hypothesizing or modifying hypothesizes in relation with insufficiencies, selecting and trying one of the solutions, retrial, and concluding accordingly.

Creativeness visualizes as a way to seem at and solve problems from a singular perspective, avoiding orthodox solutions and thinking outside the box. This creative process allows you to discover connections, meet new challenges and seek resolutions that are uncommon, original and new. We have to be ready to break the patterns and traditional way of thinking to be ready to start thinking in a creative way. The way that's go to facilitates you to create a brand new approach to a selected situation or an issue. Creative thinking is a way of observing problems or situations from a fresh perspective that means unorthodox solutions. Creative thinking is often stimulated both by an unstructured process like brainstorming, and by a structured process like heuristic program. Over and above, it is observing something during a new way. It's the very definition of "thinking outside the box." Creativity involves what's called heuristic program, or the power to perceive patterns that aren't obvious.

At the best level, "creative" includes bringing into being something that was not there before and has been brought into being. The word "creativity" involves a large range of various skills. Creative skills aim to alter concepts and perceptions. In most descriptions of problem-solving, there's usually a step called "search for alternatives". This denotes that creativity is required during this step. Creativity is poorly understood and difficult to show but there are positive techniques that everybody can learn. Creativity should take its place alongside our other methods of handling information. Someone sitting down with the deliberate intention of generating a concept in an exceedingly certain area then proceeding to use an ingenious thinking technique systematically should represent a traditional state of affairs. Secondary school students are to be trained in the area of creative thinking. It has serious role to play in ones life. Here comes the need of the study.

Statement of the Problem

Hence the study is entitled as “Effectiveness of Cognitive Apprenticeship Model of Teaching on Life Skills under the selected categories of components - Creative thinking - among Secondary School Students”

Objectives of the Study

To find out the Effectiveness of Cognitive Apprenticeship Model on Life skills under the selected categories of components -Creative thinking - among Secondary School

Students.

Hypotheses of the Study

There exists a significant difference in the effect of Cognitive Apprenticeship Model on Life skills under the selected categories of components - Creative thinking than that of the prevailing Activity Oriented Approach among secondary school students.

Methodology

The experimental method is found to be the most appropriate for the present study. The design selected was pretest - posttest – nonequivalent group design. The study was conducted in two divisions of standard IX. For the collection of data, the present study made use of two intact classroom groups - One Experimental and one Control group. Each group consists of 34 students.

Variables used for the Study

Independent variable is Cognitive Apprenticeship Model and Dependent variable is Life skills under the selected categories of components -Creative thinking.

Tools used for the Study

- Lesson transcript according to Cognitive Apprenticeship Model of instructional design.
- Lesson transcript according to Activity Oriented method.
- Standardized Assessment Tool on Life Skills - Creative thinking which is developed by the investigator.

Statistical techniques used

The investigator made use of statistical techniques like Mean, Standard deviation, ANOVA, Analysis of co-variance (ANCOVA).

Analysis and Interpretation

Objective: To study the Impact of Cognitive Apprenticeship Model on Life skills under the selected categories of components -Creative thinking among secondary school students.

The data and result of test of significance of Experimental and Control groups on Life skills under the selected categories of components -Creative thinking based on pretest, posttest and gain scores are given below.

Table 1 : The data and results of the test of significance of Experimental and Control groups based on Pretest scores on Life skills under the selected categories of components -Creative thinking

Types of Group	N	M	SD	CR	Level of Significance
Experimental	34	19.24	2.2	0.73	P > .05
Control	34	19.7	02.89		

The Mean value of Pretest scores of Experimental group (19.24) is more or less same as Control group (19.7) on Life skills under the selected categories of components -Creative thinking. The obtained t value of the Pretest scores is 0.73 and is less than the table value 2 at .05 level. So it is not significant even at .05 level. From this it is clear that two groups are equal on Life skills under the selected categories of components -Creative thinking before the Experiment.

Table 2: The data and results of the test of significance of Experimental and Control groups based on Posttest scores on Life skills under the selected categories of components -Creative thinking

Types of Group	N	M	SD	CR	Level of Significance
Experimental	34	21.38	2.26		
Control	34	19.61	2.69	2.94	P < .01

The Mean value of Posttest scores of Experimental group (21.38) is greater than the Control group (19.61) on Life skills under the selected categories of components -Creative thinking. The obtained t value of the Posttest scores is 2.94 which is significant at .01 level. From this it is clear that two groups are different after the Experiment on Life skills under the selected categories of components -Creative thinking.

Table 3 : Data and Results of Test of Significance of Gain Scores on Life skills under the selected categories of components -Creative thinking among Students in Experimental and in Control groups

Groups	N	M	SD	CR	Level of significance
Experimental	34	2.15	3.34		
Control	34	0.09	3.08	2.62	P < 01

The Gain Mean scores of the Experimental group (2.15) is greater than that of the Control group (0.09). The obtained t value is 2.62 which is significant at .01 level. Hence it is inferred that Experimental group is better in performance than that of the Control group with regard to Life skills under the selected categories of components -Creative thinking.

Only by analyzing the Pretest scores, Posttest scores, gain scores and by finding out Creative ratio it cannot be concluded that the two groups may or may not differ significantly in their performance after the conduction of the Experiment. It may be affected by other intervening variables. The investigator selected two intact class room groups without considering any variables like sex, age, socio economic status etc. So it is necessary to analyze the data using the statistical technique 'Analysis of covariance' (ANCOVA). Before proceeding to ANCOVA,

ANOVA was done. The summary of ANOVA of Pretest(x) and Posttest (y) scores were given in table 4.

Table 4 : Summary of ANOVA of Pretest and Posttest scores of Experimental and Control groups on Life skills under the selected categories of components -Creative thinking.

Source of Variation	df	SSx	Ssy	MSx	Msy
Among Mean	1	3.76	52.94	3.76	52.94
Within Group	66	437.17	420.05	6.62	6.36
Total	67	440.94	473	10.38	59.30

The obtained F_x and F_y ratios are tested for significance. The calculated value of F_x is 0.57. It is not significant even at .05 level. It shows that the Mean of Pretest scores do not differ significantly on Life skills under the selected categories of components -Creative thinking. The obtained value of F_y is 8.32. It is significant at .01 level. This indicates that there is significant difference for the Posttest on Life skills under the selected categories of components -Creative thinking between the performance of pupils in Experimental and in Control group.

Computation of ANCOVA

Table 5 : Summary of ANCOVA of Pretest and Posttest scores of students in Experimental and Control groups on Life skills under the selected categories of components -Creative thinking

Source of Variations	df	SSx	Ssy	Ssxy	Ssy.x	Msy.x
Among Mean	1	3.76	52.94	-14.11	58.21	58.21
Within Group	66	437.17	420.05	87.11	402.69	6.10
Total	67	440.94	473	73	460.91	64.31

The obtained $F_{y.x}$ was tested for significance. The table value of F ratio for df 1/66 is 3.98 at .05 level and 7.01 at .01 level. The obtained value of $F_{y.x}$ is 9.54. It is significant at .01 level. From this, it is clear that the Posttest Mean scores on Life skills under the selected categories of components -Creative thinking between Experimental and Control group differ significantly after they have adjusted for differences in the Pretest.

The adjusted Mean for Posttest scores of pupils in Experimental and in Control groups were computed by using correlation and regression. The difference between the Adjusted Means

of Posttest scores of pupils in Experimental and in Control group on Life skills under the selected categories of components -Creative thinking were given table 6.

Table 6 : Data for Adjusted Means of Posttest Scores of Students in Experimental and in Control groups on Life skills under the selected categories of components -Creative thinking.

GROUPS	N	Mx	My	Myx adjstd	t
Control	34	19.70	19.61	19.57	3
Experimental	34	19.23	21.38	21.42	
General Mean		19.47	20.5	20.5	

Adjusted Means for the Posttest scores were tested for significance at df 1/67. The calculated t value of adjusted Means is 3. The table value for df 1/67 is 2 at .05 level and 2.65 at .01 level. The calculated value is significant at .01 level. It indicates that Experimental and Control groups differ significantly on Life skills under the selected categories of components -Creative thinking for the Posttest.

Findings of the study

1. The obtained t value for the Posttest of Life skills under the selected categories of components -Creative thinking is 2.94. It indicates that Experimental Group is in advantageous position with respect to Life skills under the selected categories of components -Creative thinking as a whole.

2. The obtained t value for the Gain scores on Life skills under the selected categories of components -Creative thinking is 2.62. It indicates that Experimental Group is in advantageous position with respect to Life skills under the selected categories of components -Creative thinking as a whole.

3. The analysis helped to state that pretest (Co-variate) is significantly related to Posttest (Dependent Variable) since $P < .01$ and the Cognitive Apprenticeship Model has significant effect on Posttest on Life skills under the selected categories of components -Creative thinking since $P < .01$.

4. From the data of adjusted Means of total Posttest Scores on Life skills under the selected categories of components -Creative thinking of students in Experimental and in Control groups, the calculated t value ($t = 3$) indicates that the Cognitive Apprenticeship Model is more effective than the ordinary Activity Oriented method in inculcating Life skills under the selected categories of components -Creative thinking among Secondary School Students.

Conclusion of the study

Cognitive Apprenticeship Model has more impact than the Activity Oriented Approach on Life skills under the selected categories of components -Creative thinking among Secondary School students.

Educational implication

1. The Cognitive Apprenticeship Model is an accurate description of how learning occurs. It helps the children in the acquisition of Life skills under the selected categories of components -Creative thinking.
2. The instructor can be designed Cognitive Apprenticeship Model into more formal learning contexts with positive effect.

3. The study revealed that the effect of Cognitive Apprenticeship Model of instructional design on Life skills under the selected categories of components -Creative thinking among Secondary School students.
4. All topics and all subjects can make use of this instructional design.

Scope and limitations of the Study

Scope of the Study

Cognitive Apprenticeship Model is an inherently social learning method with a long history of helping novices to become experts in different fields. At the center of apprenticeship is the concept of more experienced people assisting less experienced one, providing structure and examples to support the attainment of goals.

Limitation of the Study

- The study was confined to the effect of cognitive apprenticeship system of instructional design on Life skills under the selected categories of components -Creative thinking among pupil of IX standard.
- The study would be confined to a single school, which would act as the sample for the entire population of the secondary schools.
- Only some topics of a single subject such as Social Science is considered.
- The study does not do comparisons between private and government schools.
- The study does not do comparison between boys and girls.

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