

Creative Ability of Physical Science Teacher Trainees

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1. Introduction

One of the essential skills that the learners must possess in the 21st century is the creative ability skill. Creative ability has become a major focus among the learner at present. In this competitive world, creative ability is one of the skill which enriches the level of the learners. The teaching function must undergo a vast change and it must encourage the learners to 'think'. Students need to be exposed to thinking process that will enable them to convert what is learned at present into usable knowledge for tomorrow. As stated above constructivism refers to construction of knowledge and understanding out of their own experience and this fosters creative ability and critical thinking among the learners which is highly essential. There are a few highly essential 21st century skills which should be essentially present among the learners such as collaboration and team work, creativity and imagination, critical thinking and problem solving. All these skills can be possibly achieved through constructivist approach. Critical thinking is different from creative ability which refers to a mental process involving intellectual talents leading to a new discovery. These skills cannot be attained through the normal classroom methodology which supports lecture method where the teacher plays a major role than the students. Constructivist approach is entirely varies from traditional approach of the classroom. Constructivist approach involves entirely a different way of learning teaching methods wherein the learner play a vital role and they learn each and every concept based out of their own experience which enhances the creative ability and problem solving ability of the learner as well. Our teaching strategy should cultivate creative thinking ability among the learners. It is highly important that only constructivist teacher can inculcate constructivist value among the learners in particular. The survey made here encompasses 20 physical

science teacher trainees from different parental education backgrounds and different residential background. It explains us the creative ability of the physical science trainees from different background through the problem solving method.

2. hypothesis of the survey

- The student teachers of physical science are high in creative ability is stated as the major hypothesis.
- The student teachers of physical science from urban residence are stated to be high in intellect and vice-versa.
- The student teachers of physical science from literate parental background are to be stated as intellectual and vice-versa.

3. Methodology

Method: The problem solving method was used in the present survey.

Sample: The sample of this survey was confined to 20 physical science student teachers of Pope John Paul 2 College Of Education, Reddiarpalayam, Puducherry.

Procedure: A questionnaire consisting of 15 MCQ's completely problem based with respect to physics was given to the 20 student trainees of first year physical science department. A duration of 30 minutes was given to complete the questionnaire. The data was analysed based on different perspectives as below.

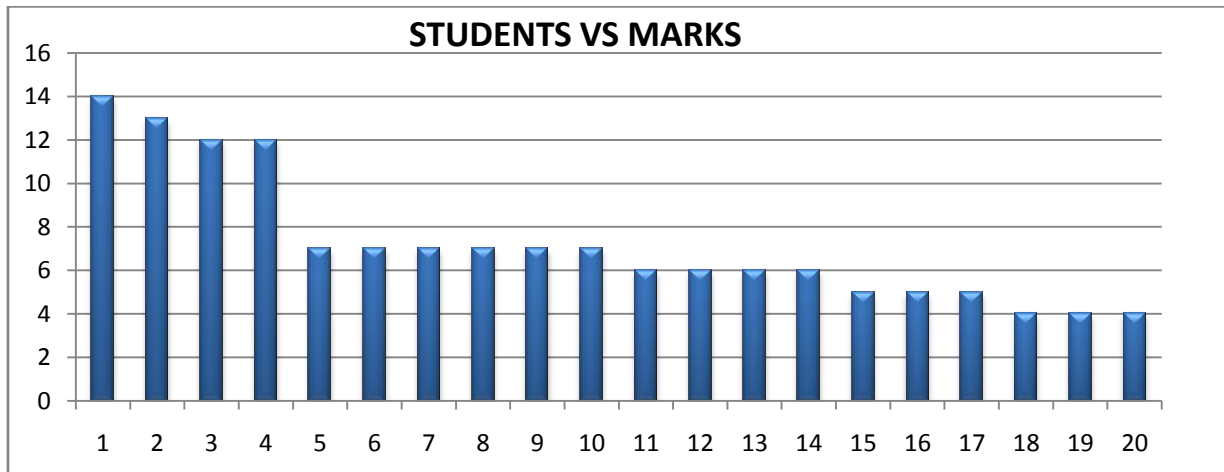
4. Data analysis and result

Weightage to Concept:

CONCEPT NUMBER	CONCEPT	NO. OF MCQ'S UNDER EACH CONCEPT
1	ELECTROSTATICS	3
2	CURRENT ELECTRICITY	2
3	HEAT AND THERMODYNAMICS	3
4	MAGNETISM	2
5	ATOMIC PHYSICS	3
6	NUCLEAR PHYSICS	2
	TOTAL	15

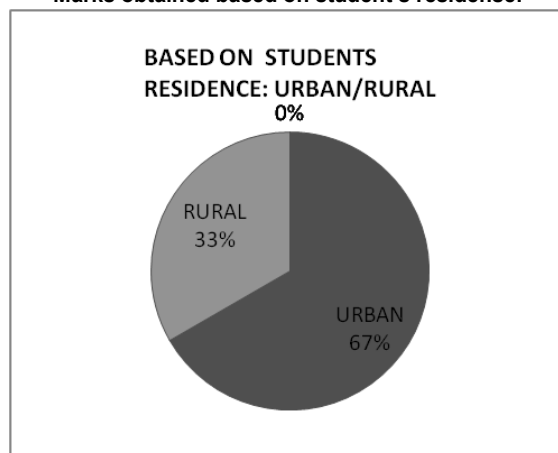
The questionnaire given had 15 MCQ's each carrying one mark. The weightage given to each concept is tabulated above.

Marks obtained by physical science trainees:



This chart depicts the marks obtained by the physical science teacher trainees of first year- Pope John Paul 2 College Of Students.

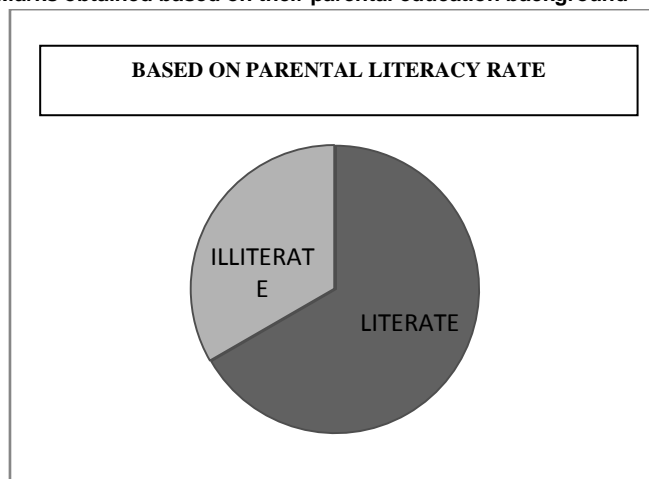
Marks obtained based on student's residence:



From the data analysed and the result obtained it can be stated that the creative ability of the physical science trainees from the urban background were high in intellect and the

students from the rural background were low in their intellect. There were also some exceptional cases found.

Marks obtained based on their parental education background



From the data analyzed the above chart depicts that the creative ability of the student trainee from the illiterate background were found to be high in their intellect than the

students from the illiterate background with few exceptions. The data were analyzed for testing the stated hypothesis. Mean and the standard deviation were obtained for the said

twenty sample and they are found to be 7.60 and 3.03 for creative ability of the physical science students. The range of the scores lies between 0 and 15 and the obtained minimum is 4 and maximum 14. It is found that the physical students are better in their creative ability.

5. Findings

The students of physical science are better in constructive and creative ability.

6. Recommendations

Some of recommendation to improve the creative ability and problem solving capability of the students to enrich their teaching learning process in order to bring about constructivism in classroom includes:

- Embrace creativity as a part of learning.
- Think creativity as a skill.
- Participate in programmes which triggers and fosters creativity.

- Make use of problem solving and scientific approach properly in the classroom environment.
- Encourage students to think convergently and divergently
- See creativity from a positive perspective.
- Establish expressive freedom.
- Use collaborative creative thinking model to solve classroom problems
- Encourage children's to gain control over the 21st century skills.

7. Conclusion

The main conclusion of the study is that constructivist approach in teaching learning process enhances and enriches creative ability of the learners and improves the other skills of 21st century as well. Such learning environment would support active learning, reflective learning, association with life experience etc. Finally I would like to add that making use of constructive approach will enhance the present education system.

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