

Impact of Activity Based Learning on Learning Science at Primary Level

Amuthavalli

Research Scholar, Dept. of Education, Alagappa university, Karaikudi

Dr.Sivakumar

Professor of Education, Alagappa University, Karaikudi

Teaching process

The child is the focus of the limelight today. Gone are the days when much of the classroom time was devoted to sing-song, verbatim recital of text-book material and unmotivated drills that were largely meaningless to the child. Today's teacher makes a much greater effort to assure that the subject-matter is appreciative to the capacity of his students. He has begun to realize that learning involves the total welfare of the child. Subject-matter and mastery of basic skills are important. The teacher today must be interested in facts and skills as such, but his concern is their use as tools that contribute to the child's development. Today's teacher emphasises the learner he looks to the students as the starting point for planning learning experiences. The teacher today is fully an educator, vitally interested in developing all the capacities of the child.

Guiding the learner

The child is of primary importance: guiding his learning experiences, as a second principle of the teaching process, ranks next. The child should begin to learn when he becomes purposefully, involved in the learning situation. He needs lectures and demonstrations, but he will become skilled only when he begins to participate. The teacher must guide but at the same time remember that learning is a function of the learner and is based upon experiencing. There are still classrooms in which the teacher plans and dominates more than he should: to him the child is virtually a puppet. The teacher who is eager to have his classes give polished public performances often robs his pupils of real learning opportunities. Teaching cannot be boiled down to a convenient formula of "telling and testing". It is the complex art of guiding pupils through a variety of selected experiences towards the attainment of a widening field of learning. A fine teacher creates in the classroom, on the play-ground, and in the co-curricular activities-situations that contribute significantly to the student. He stimulates interest by every legitimate means he can devise; as the pupil maps out and proceeds with activities, he renders technical assistance. The student must do his own learning, but the teacher can aid by pointing out unnoticed obstacles, answering questions and furnishing supplementary information or sources for research, helping the pupil analyze his difficulties, and providing

encouragement to new sources of interest in the activity. At appropriate points he can help the child evaluate his progress. Thus, the modern teacher thinks of himself as a guide rather than as a taskmaster.

Promoting learner development

Each child has his own distinct potential and limitations. The final extent of realization of his possibilities depends on the richness of the child's environment, his initial interaction with it, his later contacts with it, and his ultimate use of the awareness he develops in himself of it and through it.

Growth, as the general educator is particularly concerned with it, is largely a process of maturing through experiences. The variety and scope of a child's achievement depend upon both the quality and the kind of his experiences. A superficial contact with environment can result in stunted development. Misdirected experiences frequently lead to undesirable behaviour patterns. Learning does result from aimless activity, but the school is organized specifically to provide the most efficient and productive type of educational programme possible. All activities are, of course, not of equal usefulness. It is a part of the teacher's mission to help the student learn to select and follow through those of greatest potential worth to him.

Teaching is considered to be an art. Children are the raw material with which the teacher has to deal. Addison points out that as sculpture is to a block of marble, education is to the human soul. The teacher unconsciously designs the child entrusted to him. The teacher has a purpose and he modifies the child accordingly.

Teaching is a sublime art. It is impossible to separate the teacher and teaching. The teacher, in fact, mirrors himself into the child; he puts an indelible stamp on the young, growing plastic mind of the child. The child generally takes after the teacher.

The artist handles inanimate material and imparts life to it through his work. He gives any shape he likes to the material. He gives expression to his own ideas. He imposes his will on the material with which he works, and creates an object. Can the material with which he works and creates an object. Can the teacher do that certainly not. The teacher cannot give any shape to the living material he comes in contact with. The child is a growing, developing, human being with a will of its own. He reacts to teaching. As a matter of fact, learning is interaction. The teacher is not to make the children blind followers but intelligent leaders. He has no hammers and no brushes. He cannot touch the child yet he is to make an impact felt, introducing changes in the behaviour pattern and ultimately the personality of the child. Not only that. His influence should prevail even if he is not there. As a matter of fact, his greatest strength lies in being dispensable.

Teaching is an art and the teacher an artist so far as he -

1. creates learning situations ;
2. motivates the child to learn ;
3. arranges for conditions which help in the growth of the child's mind and body;
4. utilizes the initiative and play urges of the children to facilitate learning ;
5. turns the children into creative beings ;
6. inspires them with the nobility of thoughts, feelings and action,
7. makes them self-reliant and resourceful ; and
8. helps them to be what they can be.

The teacher has to be a very careful artist. He has to create a new life pattern full, vigour and activity.¹⁵

Activity based learning

A variety of activities designed based on social constructivist principles had simulated the interest and involvement in the learning process with the positive outcome of seeing students actively participating in the construction of their own knowledge rather than big passive listeners. At the end both teacher and students gained a some of achievement and containment. Deeper understanding of the topic and informed interpersonal skills were developed.

Activity based means something "hand on it", the activities incorporated in learning concepts proved to be effective tools in an classroom environment. In this study we use variety of activities that reinforced presentation, team building skills during an group activity in the learning concepts. Using of visual aids to emphasize the concept to be delivered during the lesson. In classroom climate the students participated with enthusiasm and even contributed to new activities, thus adding sparkle and liveliness to the learning atmosphere.

One of the best ways to understand something is to get ones hands an it and actually experiment with it. In present world, there is a need for a change in our mode of teaching and learning. This activity based teaching provides simple yet dynamic for an effective classroom teaching. It also taps into a source of energy and good will that would enable students to innovate and manage change. It provides learners with hope in tackling practical problem by using their own resources. Hence it is also a very useful tool in improving the existing conditions in society.

It is the method that is more interactive and hands an environment created, more interaction and better relationship is established between students and teachers. The students are motivated and totally engaged in the learning activities and discussers. It increases the experience and confidence of teachers with a collaborative approach to supervise. Developing a basis for deciding effective approaches to be used to improve the

teaching-learning environment also benefits the school. The collaboration between the school, the teacher and the student is well established.

Advantages

The activity based teaching using visual aids help to create a favourable learning situation through facilitating teaching-learning process.

To learner

Better understanding in concepts
 Favours the attention,
 Creates the interest, desire for more learning.
 Better organization of the memory more retention,
 Motivates to take action
 Facilitates recall and ablation
 Improved interpersonal skills
 Willingness to participate in group activities.

To teacher

- Makes the classroom lively
- More structured organized and systematic teaching.
- Helps him to avoid monotony

Can attract more number of audience

Saves time and energy

Increases the experiences and confidence of teachers

To Teaching Process

Gives liveliness in the classroom
 Brings the learner and teacher closer to each other
 Bridges the communication gap and language barriers
 Realistic and gives enthusiasm to the learner
 Message redundancy can be achieved
 Improve the teaching learning environment.

Title

“Activity Based Teaching in science concept at V standard level: An Experiment”

Attention activation strategies were effective in enhancing the span of attention and perceptive skills. Attention activation strategies enhance the perceptive skills of learners and perceptive skills of learners and perceptive skills improve the achievement level of learners and bring better results. Learners should be given training to enhance their level of attention for developing their perceptive skills in learning. Attention activation strategies have both cognitive and physical aspects for joyful and effective teaching to facilitate learning. A child's growth depends on developing perceptive skills. In

the development of the perceptive skills, it is essential that the teacher should make the learners active rather than passive. The teacher should provide a variety of experiences of the same subject in a variety of situations to help better acquisition of knowledge and to build the perceptive skills (A.R. Saravana Kumar & S. Mohan).

G. Manimaran, K. Anandan studied on opinion of the Primary Teachers towards the Activity - Based Learning. The salient findings of the study are all the primary School Teachers have positive opinion towards ABL female school Teachers have significant positive opinion towards ABL compared to their counterparts the Urban Teachers have significant positive opinion towards ABL than the Rural Teachers the opinion of more experienced teachers and less experienced teachers is the same towards ABL, and no significant difference has been found with respect to Married and Unmarried Teachers. Education Implications The findings of the study reveal that all the primary School Teachers have positive opinion towards ABL. This is a positive trend. Previously the classroom was filled with 'teachers talk' and 'students not taking'. But after the implementation of ABL approach, students' involvement in studies was considerably increased. Educational Statutory bodies like NCERT and NCTE may implement more innovative ideas to make this approach more successful.

Satapathy, M.K.: Sharma, A.L.N. and Mishra, P.K. 1996 studied an Development of local-specific and activity - oriented resource materials for promoting learner - centered MLL - based teaching of EVS - II at Class III stage in Gajapati district of Orissa.

Major Findings: (1) more than 200 examples and 100 activities had been identified for EVS - II in Class, III, pertinent to curricular concepts. (2) The suggested supplementary examples and activities, besides being useful in transaction of lessons, made learning joyful and interesting.

Jain. S.C. 1997. Child - centred interactive activities: A new look at instruction and continuous evaluation for mastery learning. In Teacher Empowerment and school Effectiveness at Primary Stage: International perspective, National Council of Educational Research and Training. Major Findings: (1) After conducting the instruction using an exemplar activity, about 45% to 70% students were not, able to perform the similar tasks successfully. (2) Even after, conducting guided activity and providing remedial teaching to three students about 25% Lo 40% students could not perform the similar tasks successfully. But after organizing guided activity and independent practice activities, about 80.16 to 95% of these students performed the similar tasks successfully. (3) Between the two groups of successful and unsuccessful guided activity .solver, there was not any significant difference on the score of each activity of post.-test. (4) In spite of failure in solving tic guided and independent practice tasks at the initial stage, the remedial measures taken by Ole teachers helped most of the learners in performing the similar tasks successfully.

Panda. B.N. (1996), Effect of activity-based teaching-cum-evaluation strategy on child achievement and retention. In studies on Classroom Processes and School Effectiveness at Primary Stage. National Council of Educational Research and Training. Problem: Major Findings: (1) It was found that the experimental group performed better than the control group in every unit as well as overall performance. (2) Systematic activity-based teaching - cum - evaluation strategy was found a better method as compared to the traditional method in developing mathematical concepts. (3) Retention of learning materials was better in the experimental group than in the control group.

Panda, S.C. (1990). Effect of competency-based instruction in achieving MLL competencies in Grade IV in Oriya medium schools. In studies on Classroom processes and School Effectiveness at Primary stage. National Council of educational Research and Training. Major Findings: (1) There was remarkable difference in the achievement of both the groups. (2) The competency-based instruction yielded significantly better results than the traditional method of teaching (3) The experimental group differed significantly from the control group at the post-test stage. (4) On the whole 87.51% in experimental group could score more than 60%. Whereas in control group only 27.75% could achieve the same.

Research Questions

The investigation was carried out with a view to finding out the answers to the following questions

1. What is the level of Achievement in Science of the students of V standard?
2. How far is the Activity based teaching of Science effective in teaching of Science for students of Standard V?

Objectives of the Study

1. To study the effectiveness of Activity based teaching upon teaching of Science at Primary level.
2. To find out the extent of Achievement in Science of the students of Standard V.
3. To develop Activity based lesson plan for teaching of Science to student of Standard V.

HYPOTHESES

1. There will be no significant difference in the mean scores for achievement in Science in the pre-test between control group and experimental group.
2. There will be no significant difference in the mean scores in achievement in Science between the pre-test and Post-test for the control group.
3. There will be no significant difference in the mean scores Achievement in Science between the pre-test and Post-test for the experimental group
4. There will be no significant difference in the mean scores in Achievement in Science for the Post-test between control group and experimental group.
5. Gap closures in experimental group will be greater than those in control group.

Table 1 Distribution of the final sample in the control and experimental groups of the study

| Name of the School | Control group | Experimental group | Total |
|-----------------------------------|---------------|--------------------|-------|
| Panchayat Union Elementary school | ---- | 30 | 30 |
| Panchayat Union Elementary school | 30 | --- | 30 |
| Total | 30 | 30 | 60 |

Development of Activity Based Teaching Module**Tools Used in the Study**

The investigator has developed or adopted the following tools to generate the data for the present study.

1. Activity based teaching Module
2. Achievement test: Pre-test/Post-test

Analysis and Interpretation**Hypothesis 1****Research Hypothesis (H_R)**

There will be significant difference between experimental group and control group in the pre-test performance in Achievement in Science.

Null Hypothesis (H_0)

There will be no significant difference between experimental group and control group in the pre-test performance in Achievement in Science.

Table 2 Pre-Test Performance Control Group and Experimental Group

| Group | N | Mean | SD | "t" value | Significance |
|--------------------|----|-------|------|-----------|--------------|
| Control group | 30 | 15.18 | 5.48 | 0.36 | NS |
| Experimental group | 30 | 14.85 | 6.32 | | |

df=58

 $t_{(0.05)} = 1.96$ $t_{(0.01)} = 2.58$

The table reveals the following facts.

- The calculated "t" value is less than the table value
- "t" value is not significant at any level
- Hence the research hypothesis is rejected and null hypothesis is accepted

There is no significant difference between experimental group and control group in the pre-test performance in Achievement in Science.

Hypothesis 2**Research Hypothesis (H_R)**

There will be significant difference between pre-test and post test performance for control group in Achievement in Science.

Null Hypothesis (H_0)

There will be no significant difference between pre-test and post test performance for control group in Achievement in Science.

Table 3 Pre-Test / Post - Test Performance for Control Group

| Type | N | Mean | SD | "t" value | Significance |
|-----------|----|-------|------|-----------|--------------|
| Pre test | 30 | 15.18 | 5.48 | | NS |
| Post test | 30 | 16.83 | 5.74 | | |

df= 58 $t_{(0.05)} = 1.96$ $t_{(0.01)} = 2.58$

The table reveals the following facts.

- The calculated "t" value is not greater than the table value
- "t" value is not significant at any level
- Hence the research hypothesis is rejected and null hypothesis is accepted

There is no significant difference between pre-test and post test performance for control group.

Hypothesis 3

Research Hypothesis (H_R)

There will be significant difference between pre-test and post test performance of experimental group in Achievement in Science.

Null Hypothesis (H_0)

There will be no significant difference between pre-test and post test performance of experimental group in Achievement in Science.

Table 4 Pre-Test / Post - Test Performance for Experimental Group

| Type | N | Mean | SD | "t" value | Significance |
|-----------|----|-------|------|-----------|--------------|
| Pre test | 30 | 14.85 | 6.32 | | S |
| Post test | 30 | 20.17 | 6.83 | | |

df=58 $t_{(0.05)} = 1.96$ $t_{(0.01)} = 2.58$

The table reveals the following facts.

- The calculated "t" value is greater than the table value
- "t" value is significant at 0.01 level
- Hence the research hypothesis is accepted and null hypothesis is rejected

There is significant difference between pre-test and post test performance of experimental group.

Hypothesis 4

Research Hypothesis (H_R)

There will be significant difference between experimental group and control group in the post-test performance in Achievement in Science.

Null Hypothesis (H_0)

There will be no significant difference between experimental group and control group in the post-test performance in Achievement in Science.

Table 5 Post-Test Performance Control Group and Experimental Group

| Group | N | Mean | SD | "t" value | Significance |
|--------------------|----|-------|------|-----------|--------------|
| Control group | 30 | 16.83 | 5.74 | 5.42 | S |
| Experimental group | 30 | 20.17 | 6.83 | | |

df=58

 $t_{(0.05)} = 1.96$ $t_{(0.01)} = 2.58$

The table reveals the following facts.

- The calculated "t" value is greater than the table value
- "t" value is significant at 0.01 level
- Hence the research hypothesis is accepted and null hypothesis is rejected

There is be significant difference between experimental group and control group in the post-test performance.

Gap Closure

Gap closure is the difference between the mean score obtained by the group and the maximum score, called perfect score. The gap closing score is the percentage up to which the gap to wards perfection gets closed for a group. Percent gap closed is defined by a variable which might be termed percentage of ignorance gap closed and stated as percentage.

Table 6 Gap Closure for Control Group and Experimental Group

| S.No | Group | Gap Closure |
|------|--------------------|-------------|
| 1 | Control group | 11.13 |
| 2 | Experimental group | 35.12 |

Percentage of the Gap closure for the experimental group is 35.12 where as there is a gain of 11.13 for the control group. The percentage of Gap closure for control group is negligible. The increase in percentage of Gap closure for experimental group is a proof for the effectiveness of Computer Assisted Instruction.

Interpretation

This is an experimental study with pretest post test equivalent group design. The groups were matched. The control group and experimental group were identical and this indicates the nature of identicalness in tune with the pre-test mean scores of both groups. All the pre-test 't' value for control and experimental reveal no significant difference among control and experimental groups. This establishes their identical nature and no significant achievement in their pre-requisite knowledge.

The means of pre-test scores and post-test scores of control as well as experimental groups differ significantly (0.01 level) with the post test mean being greater than the pretest mean. The implication of that is that the level of acquiring of the basic skills in Science has increased due to traditional method in control group and ACTIVITY BASED TEACHING in experimental group.

The post test scores of control and experimental group differ significantly. The means score of experimental group is greater than that of control group.

Implications of the study

Activity based learning influences the achievement in learning of science.

Both the teacher and the taught desire immense pleasure in activity based teaching-learning process. Activity based learning motivates the learners and sustains the interest of the teachers in learning. Retention of what is learnt is enhanced to the appreciable extent. Hence the teachers should go in for 'Activity based teaching'.

Conclusion

The study established the impact of activity based learning. The teachers may prepare their lesson plans incorporating events or phenomenon or activities so as to provide opportunities to learners through 'Activity based learning'.