TO ANALYZE THE ACTIVITY-BASED METHOD IN SCIENTIFIC LEARNING AT PRIVATE SECONDARY SCHOOLS OF SITE TOWN KARACHI

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ABSTRACT

The research was about activity based teaching of science subjects at SITE Town Karachi. The research found that first of all teachers were not properly trained. They neither had ideas about children psychology nor they had different methods according to the needs of subjects. It showed lack of professional skills and a worst picture came in front of us. In some areas even trained teachers did not use their skills properly only because of environment does not suit activity based learning. School management does not support teachers properly as they must have to do. They do not provide materials and aids. Students mostly belong to lower and middle class. They do not have enough resources to get knowledge from their selves. So they are depended mostly on teachers to acquire knowledge. Teachers are their main source of knowledge and if teachers do not provide them proper knowledge they will be deprived of it. Then they lose interest in studies and concentration moves on others sides of society. To bring them back towards studies teachers and principal must think together. Students like activity based teaching because it

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clarifies the concept. Now it's the responsibility of teachers to bring students back towards study and create interest of study in them. The study reveals the importance of activity based methods as students are fed up with traditional methods. They are not taking keen interest and now it's time to bring a change in our behavior about teaching strategies. It is found that curriculum is also not the students' centered. Students feel it as an extra burden on them. They feel that curriculum is over loaded and too many things are included in it which makes it difficult to students to complete that in time.

KEY WORDS

Activity based method, Teaching, Science, Private Secondary Schools.

INTRODUCTION

Dictionary defines science as "a branch of knowledge or study dealing with a body of facts or truths systematically arranged and showing the operation of general laws such the mathematical sciences etc." If we go through the meaning of this definition we will have clear concept that we will collect facts through a systematic way and will prove the laws by the process of experiments and thus we will be able to deliver the laws of nature or science to the next generation and thus they will have better comprehension over their particular subject or topic whatever. But if we go into school and meet the teachers and look at their ways of teaching especially in SITE Town Karachi we will come to the point that most of the teachers dictate laws and use lecture method to demonstrate the scientific laws which can be more easily understandable if they just change their method from lecture to activity base.

Science has no doubt full control over our lives and it has become the essential part of our lives. Students want to know about the various scientific basic rules and they show great interest if teachers verify those rule by activity base methods. They (students) feel that activity base method is just suitable for their basic needs and if teacher explain them orally and do not verify them practically or in activity base method they remain unsatisfied. The thrust for knowledge increases in them and thus a sort of frustration arises in them and they start not to show interest in scientific subjects. Whereas if teachers apply activity base method they participate with heart and soul and their learning level also increases.

This research is especially designed to analyze the positive & negative impacts of various teaching methods used by different teachers of SITE Town Karachi and the compare them with activity base method and bring out the results. This study will try to prove the importance of activity method in learning process of students of scientific subjects.

STATEMENT OF THE PROBELM

The teaching method used by teachers especially activity based of science subjects in different secondary schools of SITE TOWN Karachi would be discussed. We would like to study the lack of using Activity based methods in teaching science subjects.

PURPOSE OF THE STUDY

The main purpose of the study was to bring betterment in teaching styles of teachers of scientific subjects and to enhance the importance of activity base learning in them. Another purpose is to emphasize the importance of activities for enhancing learning and

To analyze the level of satisfaction among students taught through activity base method and to improve the quality of class room learning

RESEARCH QUESTIONS

- Is there no significant difference between old and traditional methods and activity based method in terms of learning?
- Is there no significant difference between the mean scores of learning activities between trained and untrained teachers using activity based method?
- Is Curriculum students' centered and it is fulfilling the needs of both students and teachers?
- Are Students are fed up of traditional methods and Do they want change in class room learning methods?

SIGNIFICANCE OF THE STUDY

Teaching of science is not doubt an art. This art would be at its peak if teachers are properly trained and are in use of activity based teaching methods.

This study would help the teachers to emphasize the importance of activity based methods during their teaching. It would help them to reduce the load of curriculum and to help the students an active participant in class room learning.

REVIEW OF THE RELATED LITERATURE

A review of literature verifies the need for this study. Activity based instruction is the form of learning where the learner is actively engaged in a task. The focus is on making the abstract concrete and on learning by doing. It can be teacher-driven - with direction from an instructor - or learner-driven with the learner having freedom to explore

There are advantages and disadvantages of this method;

Activity based instruction appeals to those who enjoy learning through doing. However, not all learners are active learners. It does work for those who are actively inclined. Activity based learning can be fun and motivate those students who are used to everything being entertaining, exciting, instantly gratifying and easy. Activity based learning does give the child scope for independent learning and exploring something on their own without direction from a teacher. Hence this method has some disadvantages too. Activity is just part of learning.. Active learning should be balanced with other less concrete experiences. Young learners can totally loose the point of the exercise and not gain anything from it. For example, using paints to make a chart to supposedly learn about graphing can degenerate to a painting exercise where the child simply think they are making a picture. The exercise is too much like play and the child does not realize they are meant to be doing something totally different.. Active learning can become very trivial for advanced learners. When a concept is understood and the learner is ready to move on it would be very tedious and time consuming to do some practical activity based around the concept. Comprehension of the concept can be tested in more efficient ways and the learner spared the hassle associated with lengthy practical exercises. Much advanced matter (in sciences especially) is abstract and doesn't not lend itself to activity. The learner may be limited in their learning pathway because of being directed towards more practical elements of knowledge and applications of theories rather than the development of raw theories in themselves.

(Francis Harris @ http://www.educationspace360.com/index.php/activity-based-learning-advantages-disadvantages-education-10221/)

The review of literature is divided into further that Why do we need activity based learning and what are teaching strategies?

WHY DO WE NEED TO USE ACTIVITY BASED LEARNING METHOD?

In the process of learning, they experience, memorize and understand. Students need to be provided with data and materials necessary to focus their thinking and interaction in the lesson for the process of analyzing the information. Teachers need to be actively involved in directing and guiding the students' analysis of the information. It requires active problem solving by students in finding patterns in the information through their own investigation and analysis. With continued practice in these processes, students learn not the content of the lesson but also develop many other skills. It enhances creative aspect of experience. It gives reality for learning.

Uses all available resources. Provides varied experiences to the students to facilitate the acquisition of knowledge, experience, skills and values. Builds the student's self-confidence and develops understanding through work in his/her group. Gets experiences, develop interest, enriches vocabulary and provides stimulus for reading. It develops happy relationship between students and students, teachers and students. An activity is said to be the language of the child. A child who lacks in verbal expression can make up through use of ideas in the activity. Subjects of all kind can be taught through activity. Social relation provides opportunity to mix with others.

KINDS OF ACTIVITIES

The activities used in this strategy can be generalized under three main categories:

- Exploratory - gathering knowledge, concept and skill.
- Constructive - getting experience through creative works.
- Expressional - presentations.

The Activities we should focus on:

EXPERIENCING

- watching, observing, comparing, describing, questioning, discussing, investigating, reporting, collecting, selecting, testing, trying, listening, reading, drawing, calculating, imitating, modeling, playing, acting, taking on roles, talking, writing about what one can see, hear, feel, taste, experimenting and imagining.

MEMORIZING

- Sequencing ordering, finding regularities and patterns, connect with given knowledge, use different modes of perception, depict.

UNDERSTANDING

- Structuring, ordering, classifying, constructing, solving, planning, predicting, transferring, applying knowledge, formulating ones individual understanding, interpreting, summarizing, evaluating, judging, explaining and teaching.

ORGANIZING ACTIVITIES

- The process of organizing activities must be based on curricular aims bringing together the needs, ideas, interests and characteristics of the children with the knowledge, skill,

experience, and personality of the teacher within a given environment. The extent to which the teacher works with students individually or in groups affect the relation the teacher has with each child.

STEPS REQUIRED FOR EFFECTIVE ORGANIZATION OF ACTIVITIES

a. Planning.

b. Involving children in the learning process.

c. Each child is made an active learner.

d. For each activity ensure you follow the principles of:-

- What?
- How? Work directions step by step, including:
- With whom? Where? How long?
- What after?

e. Ensure you give clear instructions before each activity. It must focus on the above a, b, c, d.

ROLE OF A TEACHER IN AN ACTIVITY BASED METHOD

- A planner, an organizer and evaluator.
- Facilitator.
- Decision maker.
- Knowledge imparter
- Disciplinarian

http://eprogressiveportfolio.blogspot.com/2012/06/activity-based-teaching-method.html

TEACHING STRATEGY

ACTIVITY BASED LEARNING

Activity method is techniques adopted by a teacher to teach through activity in which the students participate thoroughly and bring about efficient learning experiences. It is a method in which the child is actively involved both mentally and physically. Learning by doing is the main focus in this method and more a person learns and longer he/she retains

It means any organized behavior that the teacher and students engaged in for a common purpose. Activity based teachings is an approach adopted by the teacher whereby activities are used to bring about effective learning experience.

Activity based method is student centered learning that is taught through many different activities.

TYPES OF ACTIVITY BASE LEARNING

1. Exploratory – gathering knowledge, concept and skill.
2. Constructive - Gathering experience through creative works.
3. Expressional – presentation.

PURPOSE OF ACTIVITY BASED LEARNING

Activity based teaching method acts as an Active problem solver for the students. It enhances creative aspect of experience. It also gives reality for learning. This type of learning uses all available resources. It provides varied experiences to the students to facilitate the acquisition of knowledge, experience, skills and values. It builds the students self-confidence and develops understanding through works. It helps to develop happy relationship and interest in them. When

we give an activity it is said to be the language of the child. It is effective in all the subjects and Social relation provides opportunities to mix with others.

PRINCIPLE OF ACTIVITY BASE LEARNING

As we know that activity based teaching is a learned –centered-approach. It emphasis on experimental learning. Activity based teaching promotes acquisition of social skills by providing opportunities for learner to work cooperative and collaboratively. It provides potential and creatively in individuals. it encourages the union of work and play and it Uses child friendly educational aids to foster self-learning.

Role of a Teacher	**Role of a student**
A planner, an organizer and evaluator	Active participation
Facilitator	More interaction in collaboration with others
Decision maker	Discussion (discourse) and research
Knowledge imparter	Confident and well prepared
Disciplinarian	Involved in the program flow

PROCEDURAL STEPS OF ACTIVITY BASED TEACHING STRATEGY.

Planning is must for all teachers and to everybody, as it guides to do the work properly. Success is all brought because of well planning. Before doing something we have to plan at the beginning. While planning an activity to students we have to think of what? When? How? Where? Why?

While giving an activity to the students, teacher should think of how he/she could make his/her students involved in doing activity given. The activity must be planned in such a way that all students can participate.

Making children's involved in doing activity can make them active learner. If they are in a group, make a point that, they must contribute their opponents' to the group discussion and let the group members have some comments.

For each activity make sure that you follow the principles of:

What?	What type of activity you are going to give to the students?
How?	Students must be given clear instructions
	(Work direction step by step, including; with whom? Where? How long?
What after?	Ensure that you give clear instruction before each activity.

ADVANTAGES

Activity based teaching method Can be used in all the subjects. It Promotes better understanding of a lesson as it is learning by doing. Ethics are usually formed when using activity based. It Enhances Self efficacy in child. it gives an opportunities to work independently and in groups. It inspires the students to apply their creative ideas, knowledge and minds in solving problems.

DISADVANTAGES

Students who have Low ability can't take active participation. Learners would lose interest and become dormant in the discussions. It will have Lengthy procedure and requires flawless planning. Focusing on activity to make learning fun can actually hamper those students who would make good progress without it.

(http://dorjigss.blogspot.com/2013/05/normal-0-false-false-false-en-us-x-none.html)

STRATEGIES

CASE-BASED LEARNING OR CASE METHOD TEACHING

The case-based approach to teaching and learning utilizes real or imagined scenarios to teach students about their field of study. Barnes (1994) describes the case as "an account of events that seem to include enough intriguing decision points and provocative undercurrents to make a discussion group want to think and argue about them."

CONCEPT MAPPING

A concept map is a graphic representation for organizing and representing the pieces and parts of knowledge. It includes concepts, usually enclosed in circles or boxes of some type, and relationships between concepts or propositions, indicated by a connecting line between two concepts.

DISCUSSION QUESTIONS

Discussion questions engage students by challenging them to think by ***analyzing, synthesizing*** and ***evaluating*** the subject matter. These are critical questions conceived to utilize group discussions in a manner that will move the student from ***knowledge*** of facts to the ***evaluation*** of outcomes. When designing class discussion questions we recommend utilizing Bloom's cognitive levels by beginning with a ***comprehension*** question (what) followed by an ***analysis*** question (why) and end with a ***synthesis*** question (how). This methodology develops the skills necessary to be a critical thinker and assesses the student's learning based on the six different levels specified in Bloom's Taxonomy. One of the great benefits of this method is that students must come to class prepared because class time is devoted to upper level learning.

DEBATE

Classroom debate is a form of empowered learning in which students become involved in researching, teaching, and recognizing alternative points of view. Debate revolves around the debate proposition, which should be a carefully worded one-sentence statement, calling for some new position or change in the present.

QUIZZES & EXAMS

Typically educators have utilized quizzes and exams as assessment tools. Harris and Johnson have found that collaborative learning can occur through preparation, execution, discussion and review of examination questions (Aronson @www.jigsaw.org)

POPULATION OF THE STUDY

All secondary schools of SITE Town are the population of the study. There are about 300 secondary schools at SITE Town Karachi.

SAMPLING:

By using stratified random sampling the researcher selected 10 schools from five different areas of SITE Town. Thus we will have 50 participants to reply.

DESIGN OF THE STUDY

The participants of the study are divided into three groups. We get the replies from principals, teachers and students through personal meetings to get the most number of replies. Our participants were from 10 schools. And the researcher gets 5 participants from each school so we get 50 principals , 50 teachers and 50 students to reply. A pre test was given the participants to make sure they are equivalent and the same test was administrated.

RESEARCH INSTRUMENTS

Questionnaire was our research instrument. It was a case study. Questionnaires were given to the principal, teachers and students. Their replies and percentage of the replies give us the data to make our research easy.

FINDING OF THE STUDY

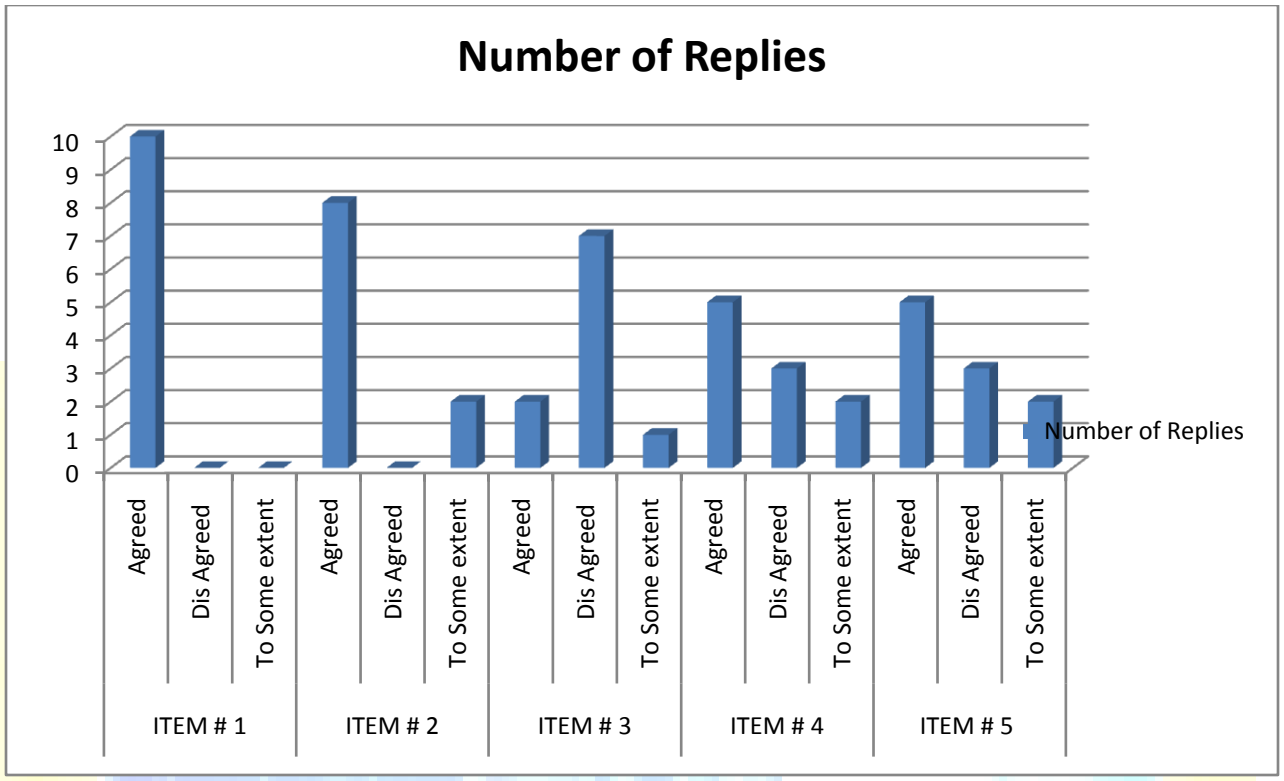
- Teachers are using mostly old and traditional methods
- Students want to be taught by activity based methods.
- Management is not ready to provide necessary equipments to the teachers

- Teachers are not properly trained to use different methods.
- Schools have no proper labs and teaching aids.
- School principals do not support teachers properly.
- Teachers normally use old lecture method.
- Students want to get involve in learning process.
- Schools spend lesser money on labs and equipments.
- Teachers do not work hard they feel activity based method as a burden.
- Curriculum is not according to the modern standard.
- Students have interest in science only they need to be motivated.
- Teachers should have more time in labs.

PRESENTATION, ANALYSIS AND EVALUATION OF THE DATA:

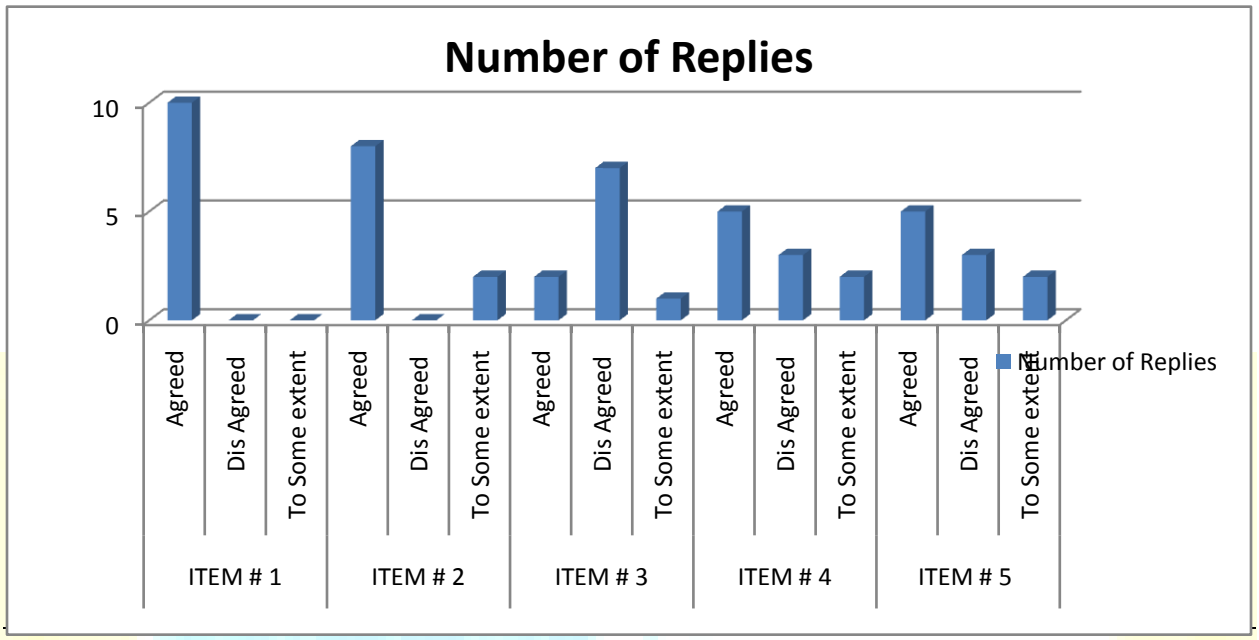
Questionnaire for Principals {10 Principal}

S #	Questions	A	D.A	TSE
1	Do your students actively participate in activity based learning	06	02	02
2	Do you agree that learning outcomes of activity base learning is more affective?	08	00	02
3	Do you have teaching aids, modules and proper science lab at your school?	02	05	03
4	Do you agree that curriculum of science subjects is student centered?	02	05	03
5	Do you agree that teaching of science subjects should be activity based only?	02	08	00



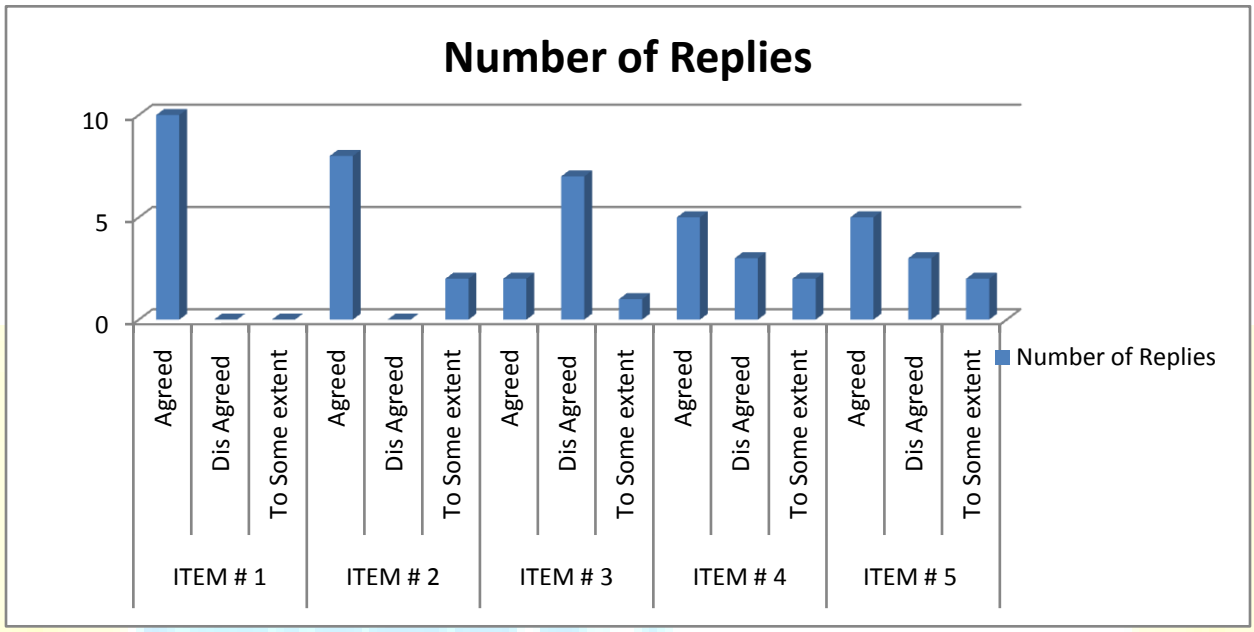
QUESTIONNAIRE FOR TEACHERS

S #	Questions	A	D.A	T.S.
1	Do you agree that science is the study of nature?	10	0	0
2	Does your school have proper teaching aids?	2	6	2
3	Do you use teaching aids and modules in your class?	5	6	2
4	Do your students actively participate in activity based learning?	6	2	2
5	Do you think that curriculum of science subjects is student centered?	6	2	2



QUESTIONNAIRE FOR STUDENTS

S #	Questions	A	D.A	T.S.E
1	Do you like activity base learning method?	10	0	0
2	Do you agree that activity base learning is concrete learning?	8	0	2
3	Do your teachers use teaching aids or modules during science periods?	2	7	1
4	Does your school have science laboratory and do your teachers use it for teaching?	5	3	2
5	Do you agree that teaching of science subjects should be activity based only?	5	3	2



CONCLUSION

It is closely observed that teachers are still using old and traditional methods. Activity based method is the need of students and time. Students want to learn and activity based method is the solution of their needs. Until and unless teachers are not fully trained and will not have refresh courses after a limited time periods the scene will not be changed. Administrations of schools need to spend more money on buying scientific equipments to increase the interest of students Change in curriculum is need of time. Curriculum is over loaded and students seem to bear it difficult to overcome the problems in completing the syllabus in time. Curriculum must be reviewed and reduced in size.

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