

## **Effect of Digital Classroom in Teaching Learning Process**

### **(A Study of Classroom Observation in Middle Income Private School)**

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#### **ABSTRACT**

This paper look into the various aspect of digital technology in teaching learning process through the conceptual framework of cognitive theories of development posed by John Piaget and Social theory of Vygotsky, Attempt is to understand the effective utilization of ICT in classroom and its benefit to the teachers and learners. Technology is considered sometimes as a boon or curse, in the modern advanced world how its utilization can be enhanced and to which extent technology, pedagogy and curriculum plays a very vital role for attaining the desired goal in the classroom has been studied through the field work.

The most important part of the work is to understand the implementation of audio video resources, smart assessment system and the amount of time required for the planning of lesson to carry out the lesson in the classroom in the desired way. Study has been taken place in a middle Income school called G A Shah universal school ,Sillod where teachers under the guidance and the motivation by the Chief mentor of the school were utilizing the effective methodology of teaching and learning taking the help of digital material prepared by the teachers as well as the resources available on the internet by considering the different theories of cognitive learning.

The study reveals the fact that with the help of digitalization of classroom abstract ideas can be understood by the students by which time of the lesson can be balanced along with the proper understanding of the concept. By considering the 21<sup>st</sup> century skills teacher were guided by the Principal and the similar thing were inculcated among the students so the learning changed from rote learning of memorization to the social, practical, project based students centric engagement.

#### **INTRODUCTION**

It's very important to have effective teaching technology which has to be utilized in the classroom teaching. We often find that in certain class the students are so silent that they do not even speak for the right answers too. The class becomes ineffective and one sided rote method of teaching, But in some classes we will find that students are enthusiastically participates in classroom activities and gain the desired knowledge. The class is so vibrant that communication between the teachers and the students is effectively handled by the both

Here the question arise is what are the factors for effective classroom teaching? Can there be traditional method

only? Is there any creativity which can be brought in the class? Is it possible for the teacher to enhance the interest of the students in the subject ? Is it not possible for a teacher to go beyond the textbook? Do teaching means simply covering the syllabus only?

All these types of questions need to be answered now days for the goal oriented long life teaching learning process. What teacher should know before entering the class .He must have the solid lesson plan for the things which he want to implement in the class . Lesson plan should be integrated with the remaining subject and its relation should be there with real life. As we know that students learn more effectively by referencing their self -that's why plan should be within the reach of the students. The examples given by the teacher must be familiar with the students so it will be possible for students to have the relation of the examples with the things to which they want to relate it.

Second important thing the teacher should know is the anecdotal record of the child. By referring it the clear ideas about the weaknesses as well as the strong points of the students can be sorted out. Since many a times students has different family background, it becomes responsible task for the teacher to effectively plan the lesson,

Teacher should relate the things with the previous knowledge of the child; he must give the motivation to the students to speak, to act and for the responses. Some of the questionnaires formed by the teacher must also be application based where it is possible for the students of high grasping level students demand can be fulfilled. The classroom environment should not be so rigid, it also should not be to- loose to make the noisy classroom. Creating interest among the students about the subject is the task which has to be effectively sustained by the teacher. A skillful teacher not only uses the new technological tools but also conducts the activities in the classroom. In the subject like social sciences French revolution can be taught with dramatization or in Maths the concept of the fraction can be taught to the students

by bring the cake or Pizza in the class and its practical demonstration along with the involvement of students Healthy completion should be cultivated in the class but there should not be any sort of comparison among the students. Peer group formation and the activities conducted according the group result more effectively as compare to any other things. In peer group students are easily able to grasp many new ideas quickly.

There should be the effective planning of reinforcement, The particular strategy for the motivation has to be followed and the positive responses has to be highlighted in the school. Students should be awarded in the class depending on the nature of the child. If the child is of shy nature probably will not be interested to go in front of others .Teacher must be a good facilitator. As it is rightly said that children can- not be taught , no -body can teach the students only the teacher can help the child to construct the knowledge , So the role of the teacher becomes the role of the good facilitator where students not only enjoy the study but also take away the things

from the classroom which are helpful for him throughout his life.

Effective technological tools must be used in the classroom for varied experience. as we know the attention span of the human being can -not be more by considering this fact classroom should not be monotonous In fact it must prevails with the variety of experience which are essential for learning

Body language of the teacher speaks with the students. Children are easily able to judge the interest of the teacher. Before going in the classes we have keep our personal problem aside and keep engaging our-self with effective learning process.

The task which has to be given to the students should be in the fragmented form which creates the interest among the students and keeps the quick responses of the students.

Dignity of every individual has to be maintained by the teacher. There should be the bond between the teachers and the students. Students should be treated as if they are our own children. Love, sympathy, Empathy, Moral values will bring the drastic changes in the field of education . Bit for that purpose teacher must fill the proud of his or her job because teaching is the profession which creates all other profession. The day when teachers will realize this that the work which will done by the teacher is the work for the development of humanity and the teacher is the pioneer of well balanced, peaceful society .it's essential for the teacher to adopt effective classroom teaching techniques with the help of digitalized resources .

## **THEORATICAL FRAMEWORK OF THE STUDY**

### **BRONFENBRENNER'S ECOLOGICAL THEORY**

When we talk about the development of the child it is an immense importance to consider the environment which surrounds the child. As the development is not one-dimensional Bronfenbrenners model proposed takes individual and environmental factors into consideration Despite the complexity of the ecological model, it offers a holistic approach to analyze multilevel and interactive influences of child development .Development is the interrelated phenomenon it affects vice versa on both the learning of child, its development and the society that's why development is influenced by experiences arising from broader social and cultural systems as well as a child's immediate surroundings .At all part of the life child is associated with society and immediate environment Ecological theories in general stress the need to understand development in terms of the everyday environment in which children are reared .For example ,Bronfenbrenner claims that “much of contemporary developmental psychology is the science of the strange behavior of children in strange situations with strange adults for the briefest possible periods of time”. Since development is the continuous process it must be studied not only in the laboratory but also in the homes, schools, neighborhoods, and communities in which it takes place.

### **FIVE SYSTEMS IN THE BRONFENBRENNERS ECOLOGICAL MODEL**

Microsystem: At the center is the child's biological and psychological makeup, including her cognitive capacities and socio emotional and motivational propensities (e.g., temperament and personality) for responding to and acting on the environment .Settings with the most immediate and direct impact on an individual's biological and psychological qualities make up the microsystem. These settings include the home and members of the household, social and educational circumstances (including classmates, teachers, and classroom resources), and neighborhoods (including physical layout, friends, and acquaintances).

Mesosystem: The Mesosystem includes the many interrelationships among the various settings within the microsystem. For example, opportunities and expectations within the family, such as access to books and learning to read or an emphasis on acquiring basic academic and socialization skills, may critically influence the child's experiences and success in another microsystem, the school. As another example, a child of divorced parents living in separate

neighborhoods may undergo frequent moves between the two homes. Such a living arrangement may have repercussions for the range and kinds of friendships the child can establish with peers. Exosystem : Social, economic, political, religious, and other settings can affect development either directly or indirectly via their impact on those who care for the child. These wider contexts make up the exosystem. In many countries today, for example, the child seldom is part of either parent's work environment. Nevertheless, the parent who encounters a difficult problem at work may bring frustrations home and express them through angry exchanges with members of the family. Urban renewal planned at city hall may have dramatic consequences for children and their interactions with peers, hopefully for the better, but perhaps not always with that effect. Skirmishes between rival villages or countries may bring poverty if the family breadwinner is killed in fighting.

Macrosystem : The broadest context is the macrosystem. The macrosystem includes the spiritual and religious values, legal and political practices, and ceremonies and customs shared by a cultural group. beliefs about child rearing, the role of schools and family in education, the importance of maintaining kinship affiliations, tolerance for different lifestyles, and the ethical and moral conventions of a society affect the child both directly (through the socialization practices of the caregivers) and indirectly (through the cultural norms and strictures defining acceptable and desirable behavior). These four systems do not remain constant over time. Historical events such as famines, wars, or other natural disasters can disrupt and devastate conventional microsystems such as schools and neighborhoods, as well as the social, economic, political, and religious framework of a community provided by the exosystem. The arrival of a new family member, separation of parents, the move to a new home, and the loss of a peer are examples of other changes a child may experience at different times.

Chronosystem :The chronosystem is Bronfenbrenner's term for this temporal dimension of influence. Change is

always taking place, and these time-linked shifts and transitions may have greater or lesser impact depending on when they occur during the child's development. Thus temporal events, too, have far-reaching consequences for each individual's psychological development.

### **Implication for learning in children**

The microsystem is the small, immediate environment the child lives in. Children's microsystems will include any immediate relationships or organizations they interact with, such as their immediate family or caregivers and their school or daycare.

How these groups or organizations interact with the child will have an effect on how the child grows; the more encouraging and nurturing these relationships and places are, the better the child will be able to grow.

Furthermore, how a child acts or reacts to these people in the microsystem will affect how they treat her in return. Each child's special genetic and biologically influenced personality traits, what is known as temperament, end up affecting how others treat them. This idea will be discussed further in a later document about child temperament.

Bronfenbrenner's next level, the mesosystem, describes how the different parts of a child's microsystem work together for the sake of the child. For example, if a child's caregivers take an active role in a child's school, such as going to parent-teacher conferences and watching their child's soccer games, this will help ensure the child's overall growth. In contrast, if the child's two sets of caretakers, mom with step-dad and dad with step-mom, disagree how to best raise the child and give the child conflicting lessons when they see him, this will hinder the child's growth in different channels. The exosystem level includes the other people and places that the child herself may not interact with often herself but that still have a large effect on her, such as parents' workplaces, extended family members, the neighborhood, etc. For example, if a child's parent gets laid off from work, that may have negative effects on the child if her parents are unable to pay rent or to buy groceries; however, if her parent receives a promotion and a raise at work, this may have a positive effect on the child because her parents will be better able to give her physical needs.

Macro system, which is the largest and most remote set of people and things to a child but which still, has a great influence over the child. The macro system includes things such as the relative freedoms permitted by the national government, cultural values, the economy, wars, etc. These things can also affect a child either positively or negatively.

Thus Ecological system has a wide range of implication throughout the life of every human being.

The most important aspect of the teaching learning process is to know the student. But what are the strategies which can be applied to find out what exactly the learner means. Is he different than all other animals? Do they have a different cognition embodied than adult and other species

.This course is giving a vast variety of knowledge, theories which has an immediate application, the patterns and the effective planning which is required for the better outcome in the school curriculum .Course has effectively correlated with the development of the child and the learning possibilities.

Learning process is crucial to all organisms. Learning is permanent change in the behavior or behavior potential produced by experience. How do children learn?

Learning do not happen inside the four walls of the schools but it is possible to learn everywhere in the society .some children learn by imitation some by trial and error ,some by efforts etc. Learning is also not always positive it can have the negative sides also as people are likely to acquire bad habits as good ones .Its then interesting to see the student of class 7 or 8 get attracts towards the smoking and all so it is important to notice that learning definitely has other sides also in short it is good to say that learning is a multidimensional phenomenon.

One of best example mentioned in the course is of classical conditioning by citing the example of popcorn its smell and relation with the beep which acts as a signal. Generally in the school we experience the changes in the behavior of the child by simply seeing the presence of the teacher in the school. If it is the case that the teacher often believes in physical punishment the student of that class will automatically generate the sensation of fear even at particular day the teacher do not use the stick to control the class but then also the fear which is generated in the mind of the students cannot be terminated suddenly because of the classical conditioning that happens at the same time students enjoy the class with lots of fun and creativity without any Burdon and boredom if the teacher is technically and the strategically a skillful teacher who studied the psychology of the child at different level. Classical conditioning also can be useful in the daily life for example because of many pleasant experiences and other adult relativesb a young child may become trusting of all adults through stimulus generalization.

### **Reinforcement**

It includes money, status, grades trophies, and praise from others . In schooling when the teaching learning process has to be completed reinforcement plays a very vital role to uplift the skills of the students .Reinforcement is responsible for strengthening the behavior. But the



question is that , Is reinforcement equally works for all ,food may serve as a positive reinforcement when you are hungry but not when you are ill or just after you finish a large meal At some instance the reward will change the behavior of the child but at the same time it can - do much with respect to other child .obviously the age factor time and need of the particular person will decide the importance of award and rewards so often in a school a small chocolate given to a Kindergarten student will bring the positive changes among them but at the same time costly smart phones awarded by the parent may not solve the purpose that's why reinforcement varies according the person. There are positive and negative reinforcement. Everyday examples of negative reinforcement occur when parents give in to their children's tantrums especially in public places

Similarly positive and negative punishment also brings the changes among the students in the school for example the students were informed that immediately after Diwali vacation on the very first day you should be present in the school and it has been observed that attendance on that particular day was good . Here the unpleasant outcome of fine made the positive changes among the students.

In negative punishment the rate of behavior is weakened In the class if teacher find a child who regularly hits the other student without any reason can be handled by the negative punishment **Role of reward delay**

Children will often choose immediate reward whether it is small as compare to the big rewards which is being planned by the teacher to give it on any other day. The students are enthusiastic learner whatever the goals are attained by the them will be required to reward immediately and hence the case which is often seen in the school that after the formative assessment or even after a class test you will find the students asking about , Sir , How many marks I have got ? Such a cute questioning of the little students has more implication and relation to the delay of reward

.nevertheless same strategy and planning will definitely not work for the bigger students ,If they are convinced that after some days the quantity of the reward will be increased they will prefer the delay in the rewards

Perfect timing of the reward is also very much essential for example smiling at someone you don't know may produce a return smile and additional positive outcomes On other occasion it may be followed by suspicious frown . **Schedule for reinforcement** also has its own importance. The question was asked in the general meeting of the teacher that when to plan the

field trip for the students and I got the answer in the CDCL course General reply is that it should be there after Summative assessment, a big exam. Why this is so because after a big exam, little if any studying takes place. as the time for the next text is approaches the rate of such behaviors increases dramatically (3How much homework has to be allotted to the students ,the another matter of policy decision among the schools . It must be not be beyond the reach of the students. They should be able to do the work allotted. In fact children should enjoy the work instead of getting burdonized because of it. Concurrent schedule of reinforcement must be

applied by the teacher to get the desired output

Stimulus controlling also has important implication to solve variety of problems in everyday life. Any sort of misbehavior occurs in the class can be handled by the application of it for example hyperactive child in the class was given the red card as an unpleasant consequences may stop the misbehavior in the class and at equally it works for enhancement of the positive behavior also . In the class students were given a task to speak in English language for a week . students who frequently tried to speak in English were given the stickers of smiley which they were bearing on their jacket . Many students followed them in a later period of time.

Operant conditioning can make a difference in the field of education. Use of smart classes, computers and tablets gives immediate responses to the children. Sophisticated programs in the computer which produces immediate reinforcement for the correct responses increases the effectiveness of teaching learning process to a great extent. In the village of our country every school with definite quantity of operant based instrument will solve the big task quality teaching and learning process.

Every individual is different from others that's why it is said that everybody is the unique in the world , in the school we observed the different students with varied social background , belief , faith and languages . Schools should not become the Prison where there is no chance of any creativity in fact it is very much essential and immediate need to focuses on maintaining the dignity of every child .rules often formulated in the schools sometimes kills the integrated curiosity and creativity of the child . Children should always walk in the line is one of the rules which may be useful for sustaining the discipline of the school but teacher say not to talk in the class, in assembly , in dining hall, on pathways and not even in the bus kills the social relativism and self - respect of the child. Schools must look into the matter that the ruled which are been formulated are really beneficial or not. At very early age students realize about their self and

anything which is related to the self can be remembered easily as compared to the others so in teaching process when teachers are planning the lesson plan must focus on the fact that self- referencing works effectively in the class

Positive feedback by the teacher for the students always plays very crucial role. So when teachers say to the child that, He can- not do anything. The perception of the child gets changed according to the teacher who see him as a slow learner so it is very much essential to use the words in the class by the teacher, there should not be some sort of Tag for a particular child it not only demoralize the students but also reduce the interest in a subject it Is mentioned that How we see our self depends largely on how others see us (4) because every child is a star. In schools priority must be given to boost the self -esteem of students.

The years between 6 – 14 are time of important development advances which happened among the students which establish the children the self of identity. They stars becoming independent, self –aware and involved in



the world beyond their family. Teachers are the role model for them, the speaking style, hair style, dress and even what type of spectacles used by the teacher will be followed by the students. School is their second home. At the juncture of this transitional age it is important for a teacher to be a better understandable personality by considering all the aspects of the behavior changes which happens among the peer groups. Because the experience both boys and girls have in school and other activities will shape their development through this pivotal age period this is the age of the dramatic changes.

In the middle childhood (age between 7 -11 ) children develop the sense of industry and learn to cooperate their peers and others . In this age if children do not find themselves competent enough in academics, music, drama etc. keep trying themselves in isolation .Generally in class KG to first standard children often want to undertake adult like activities. They acquire the fundamental skills. In the middle childhood years children spend less time under the supervision of the parents. They usually gets influenced by the teacher like instructors of dance, Sunday activity teacher , music teachers etc. you may surprise to know that in the home while playing they imitate their teacher . they behave and speaks exactly what the teacher speaks in the classroom . Do they also learn from the elder students? Obviously, Yes. In the school the mixing of different aged group students to perform certain co- curricular activity can create a homelike situation in which they will learn many things from the elder students. In this age group they also do the self- rating so when the question is asked in the class that how many of you are able to read the

paragraph of this lesson and you will find that students who are unable to read will also raise their hands which shows the strong sense of self- rating among the students. Fear factors also develop in this age group they may shy away in the activities which are unlikely to succeed at first ,so if a child is asked to participate in dance completion which he don't like finds some reason for non- participation

In the adolescence age children always try to find that who they are ? They establish sexual, ethnic and career identities. If they are restricted to wear particular type of dress leads to conflict

.They also starts questioning about the rules and the regulation of the family as well as the school. this is the age when the development of some logical reasoning enhances and students starts asking about the question on topic that why it happen and how it happens . They do not consider the opinion of the others but try to develop their own reasoning. Early adolescence want certain distance from their parents, they often want to fill this space with close relationship with others, nonfamilies adults. Mostly they will spend their time with this adult peer group. At such dramatic age group teachers role is do not simply restricted within the books but he has to become the facilitator or a friend of a child because they will be in the great need of guidance and support from non-familial adults' teacher can feel that gap to certain extent.

Child is surrounded by microsystem which contains the family school, neighbored, day care centers and peers.

The effect of the school will be long lasting on the child . What he experience in his immediate microsystem create lots of positive and negative impression on his behavior. Therefore the friend circle and the neighborhood also creates the great impact .there is no doubt that positive environment and support of teacher will groom the personality of the child. Relation between the parent- teacher also has an immediate implication on the students behavior .During the time of parents and teachers meet parent who avoid meeting the teacher, student seems to be less interested in the studies but the parent who generally take the feedback of the child for that child it is observed that students show the progress academically, this is nothing but the child's mesosystem. Exosystemm also has a direct impact on the child , the workplace of parents , their daily schedule of working , amount of the time parent which they can spend with the child also creates impact on them , this exosystem also is an important factor for the development of the child finally the Macrosystem like school policies and ethnic practices etc will indirectly impact the development of the child in many aspects .

In the course of the CDCL we learnt about the various impact, its negative and positive side . How actually teaching and learning process can be effectively delivered by considering different age group, the planning and strategy which is require to apply for children to create interest in the subject, different types of reinforcement and the effective implementation. By applying the methods mentioned in the course effective teaching learning process can definitely be executed.If the help of digital technology is taken into regular teaching learning process, the learning will become a joy.

## **OTHER CONCEPTUAL FARMWORK**

Another useful thing which can be used in the education as stated by the NCF 2005 that the proper implementation of the ICT in education will make the desired changes in the learning methodology. Role of ICT in education has the clear implication on the society. Since the digital era has already been started it will be very useful not only for the teacher or students but society as the whole to bring up the educational level of the nation where all the strata of the society can be benefited. We will see what is mentioned in the position paper of ICT and its utilization in the structure of school.

## **POLICY ON INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) INSCHOOL EDUCATION**

### **1. Preamble**

To improve the quality of education and fruitful learning process to happen in the school along with the effective pedagogy Educational technology can play a vital role. NCF 2005 has also highlighted the importance

of the ICT in school education.

To meet the need of 21<sup>st</sup> century skills it will be essential for every school children to have the knowledge of computer based literacy

## **2. Vision mission and Policy goals Vision**

The aim of ICT policy in school education is to prepare the young generation for global competitiveness and to avail the facility of education to all the strata of the society despite of the socio economic and geographical barriers.

### **Mission**

To mechanize, support and sustain ICT and ICT related activities and processes in order to improve the quality and efficiency in the school system

### **Policy goals**

To attain the above vision and mission The ICT policy will try to Create

- ICT literate and technosavvy community to contribute to the nation and the world building
- An environment of sharing where creativity of everyone will be welcomed and motivated for the further improvement in the skill of the society

Promote

- Open access to all the students and teachers with the local and localize quality content
- Participation of all section of the society through well planned and appropriate use of ICT.
- A critical understanding of ICT, its benefits and limitations.

## **3. What is ICT?**

ICT is a digitalized content available in the school education by taking the help of satellite hardware and software. It also contains different tools and techniques required for imparting and inculcating the habit of digitally sound society.

## **4. ICT in school education and challenges**

India is the country of vast diversity. Socially and economically it is too diverse that the poor and needy people, backward community and the people living in remote areas are unable to access resources. Schools providing quality education are not in the reach of the economically weaker section. In order to mitigate the gap alternate modes of education is required which can be fulfilled by the ICT in school education

## **5 .Information and communication technology in schools**

ICT is an omnibus system of education. It will be helpful for making availability of the different educational resources. There is an urgent need of making the content of the entire subject in the digitalized form so that it can be accessed by anybody at any time

.By keeping in the mind the psychology of different students different types of teaching pedagogy can be developed through ICT. Audio and Video resources can be made available to the children in villages and the remote areas. ICT can be used to avoid the scarcity of print resources. Teacher capacity building can also be managed through ICT as it will help teachers to share and explore their creativity among the others. Conventional method of training to the teachers can also be replaced through the use of it.

Large varieties of applications are available in the smart phones and other electronic gadgets which can be used in the regular teaching learning process.

## **6. Levels of competency**

Different level adapted for the different age group will be suitable for the local conditions. These levels must be revised accordance with the changing technology. There will be four different levels: basic, Intermediate, advanced and super advanced level. ICT will be the compulsory subject at the intermediate and the high school level and it will be elective subject at plus two stage. There will be integrated curriculum for different stage. It will be ensured that every child will complete advanced stage before completing schooling. A model curriculum for ICT will be developed at national level .A dedicated teacher with appropriate qualification will be appointed in every school along with the technical assistant. Teachers will be made compulsory to have the skill of ICT related tools and techniques.

## **7. ICT oriented Pedagogy**

ICT orientated pedagogy will be practiced in the class by using different techniques, tools and learning resources. Online content of the lesson will be shared and discussed. Critical evaluation of the digital content will be done. Own digital teaching material will be prepared by the teachers and it will be shared among the students and the teachers.

## **8. ICT at higher secondary level**

At higher secondary level ICT will be an elective course; it will cover the syllabus according to the current need of higher education. Vocational and job oriented courses will also be provided at this stage. Linking of the syllabus will be done with the demand

of the industries. Wide range of choices will be provided. Short term courses will be provided to meet the demand of the industry.

**9. Children with the special Needs**

ICT education will be inclusive. Different software tools will be utilized to access the facilities by persons with disabilities. All teachers will be sensitized to the problems related to the students with the special needs.

**10. Open and Distance learning**

Open learning system will be used to those who cannot go directly in the school and colleges. It will also help for the drop out children. Present open learning system will be strengthened. Access to e- books and digital learning will be given. Online courses along with the required teaching material will be created. Open learning centers will be opened at every tehsil block to make it beneficial for the rural youth.

**11. for school management**

Digitalization of the attendance will be done. Communication with parents will be increased with the help of digital messaging. Update about the progress of the children will be communicated. Digital books will be provided. All the schools will be linked to each other in order to form the nationwide network. Broadband connectivity will be provided in each school. All security measures will be implemented related to the use of internet.

**12. Infrastructure**

Special care will be taken for the ICT equipment. Large spacious room will be made with appropriate lighting. Equipments will be secured from Theft and damage. In every classroom projector along with connection to the internet will be provided.

**13. Sharing of the digital content**

Teaching learning material will be shared among the teachers as well as students  
.Appropriate and the creative useful work will be awarded. The nationwide competition for the best lesson plan, teaching material, software will be organized.

**14. Capacity building**

Pre -service as well as in service teachers training will be organized timely for the effective implementation of the ICT. General training program and the ICT training

Programme .Teacher education program will have ICT as a compulsory component. In service teachers will be give special training for the appropriate utilization of the ICT related work. Appropriate curriculum will be set up according to the different age group. ICT orientation Programme will also be conducted for the school head.

### **15. National and state level agency**

Curriculum for the ICT will be set by the expert committee group with the collaborations of national and state level educational agencies. These agencies will also take care about the developing, compilation and making digital content available to all.

### **16. Roles of the State**

State will ensure the effective implementation of the policy at different level. It should also facilitate the participation of the community in the Programme. Effective measure should be taken for making all the children at the high school level about their digital literacy. The state will set the program of action and will set up an institutional mechanism for effective implementation of ICT Programme under the existing educational system. Appropriate schemes like easy disbursement of the loan required for the material related to ICT equipment and resources will be held. State also should ensure that the regular supply of electricity will be provided to the school during working hours.

## **OBJECTIVE OF THE STUDY**

- 1) To understand the effect of digital classroom through the perspective of Cognitive theories
- 2) To study the implementation of the ICT in the classroom
- 3) To find the effective child centered teaching pedagogy
- 4) To find out whether the school children of different family background can be benefited by the utilization of technology.

## **METHODOLOGY**

This study used qualitative methods for collecting data, and focused on affective domain & Outcome. The approach was a qualitative study with a classroom observation, interview & Questionnaire method nested within it. This method approach enabled me to draw on all Possibilities and provided a broader perspective to study the three components (i.e. teacher, Their students) in an educational system.



# Interviews (teacher, student)

# Questionnaire (Teacher, student, Principal) Classroom observation (grade VI & VIII) **DATA AND**

## **PROCEDURE**

One set of data (teacher, their student) were collected for this study.

The teacher data is included interviews of 3 (std. 6 & 8) mathematics, Science and SST teachers. This school was chosen as a convenience sample, because medium of learning – English, most of them is second generation learner ,

Classroom observation- classroom observation was used to collect data to understand classroom Environment. On participant observation would be used. The objective here would be to observe How teachers are taught the math ,science SST in the classrooms. follow up interview would then give a chance to make a better sense of these observations and understand the teacher's take on the subject.

# To observe traditional way of teaching or new innovation in teaching in classroom.

# To observe if the concepts are being dealt in the same way in the actual transaction as they has been dealt in the textbooks.

# To observe response given by student on teaching.

# To observe classroom when teacher teaching, their activities. #To observe teacher contact with every student.

#To observe teacher motivate student to do activities, ways to tackle students problem

# To observe teacher motivate student to do math science and SST project, ways to tackle students problem.

## **SITE OF THE FIELD ATTACHMENT**

Field of my study is The G. A. Shah universal school Sillod, District Aurangabad. It is a private unaided English medium school following CBSE curriculum. The school is situated in lush green 7 acre campus where apart from the academic building facilities are provided for other co- curricular activities also. Universal academy is the pioneer ship taken by Edcomp , an organization which is considered to be implemented digital education in the school. Knowledge resource center is the main room through which all the activities related to the utilization of the digital boards are carried out. There is specifically one person in- charge for the Educomp who helps the teacher to plan and practice the lesson plan Total strength of the students is 467 and to

maintain the proper ratio school has a 38 teaching faculty. Newly appointed Principal is the chief mentor for the lessons to be carried out in every class. He found to be well versed in technological use of the available resources. School is serving the students of middle class and upper middle class. They are from different sociological background.

**CLASS OBSERVATION 1: Class VIII, Sub: Science, Topic: Human Circulatory System** Teacher brought the circulatory system Model in the class and was explaining about how blood flows from artery to vein and throughout the entire body of human circulatory system. The model was made of small plastic pipes through which the red color was used to explain the concept of circulation but most of the students were found unable to answer the question [posed by the teacher. Now teacher started using the digital board where video regarding the circulatory system was played with the background sound which was giving the sense of pumping of blood in the heart. Students were found keen to see the video. After completion of the video teacher asked the students whether they understood the concept properly or not. Most of the students were able to get the answer at this stage.

Students were asked to bring colorful clay on the earlier day, now it was the time to prepare the model of the circulatory system on the floor of the classroom. Students started grouping themselves and divided the class into six such groups. Each group was by forming the model of the heart. After placing the colorful clay in a proper order student were asked to label it according to their name.

It was the turn of the group leader now to have the presentation about the circulatory system. A small quiz containing 5 questions for each group was prepared by the teacher. Teacher has given the remote in the hands of students to answer the questions by using the Smart assessment system by taking the help of digital board. Each group leader tried their level best to explain the concept properly. As homework teacher told the students to visit the blood bank in a day or a two and told to submit the brief summary of their visit in the blood bank

**REFLECTION:** Even though teaching aids were used by the teacher as a model of circulatory system students were unable to construct their knowledge to that extent because it was not the familiar thing for them to understand the blood circulation. As Piaget said that students child build their knowledge by their own but since the famialrity of the concept was not found and

earlier knowledge regarding the circulatory system was not their through the perspective of the students they were unable to construct the knowledge. When the technology is used in the class the concept became familiar to the students and participation of the students like peer learning was done by group activity of making the model b using clay it became easy for students to understand the difficult concept. Appropriate homework was allotted by the teacher to visit the blood bank so that the social values will be inculcated among the students. As Vygotsky has mentioned in his study that child is the social animal and he learn many things in the society , effective utilization of the theory was found to be implemented in the class.

### **CLASS OBSREVATION 2: CLASS VI, SUBJECT: SST, TOPIC: DIFFERENT LANDFORMS.**

Introduction of the topic was done by the teacher by asking different questions about the landforms. Teacher could not get the proper responses from many students since students were not visited the actual sight of the different landforms. Now teacher started the virtual tour of mountains, valleys and plain along with the different types of drift valleys etc.by taking the help of digital board, As soon as students saw these landforms they became familiar with the different sight even though practically they have not visited the sight but by virtual tour to India students were able to locate the place and the corresponding landforms.

Teacher asked the students to draw the picture of rift valley and the told them to explain about it by their own. Group activity was conducted where students of one group was asking the question to the other group students winners were awarded by giving them pens as a reward by the students. At this stage students motivation level was at the high peak as all the students were found attending the question carefully.

Teacher asked the students to prepare the PPT related to the concept as a project work. A week timing was allotted to complete this task. As homework teacher asked the students to write the letter to the municipality about the misusing of mountains land for the construction and other thing.

**REFLECTION:** It is not possible for every child to visit the site of different landform; it will time consuming as well as economically not suitable activity. By taking the help of digital board teacher was able to create the interest among the students by taking them to the virtual tour of India. It was possible because of only the use of technology.

Involvement and the skill building of the students were also taken into consideration. That's why teacher has assigned the homework not only to draw the picture of different landforms but also making of the PPPT so that children also can be skillful to use the technology effectively. To maintain the social bond teacher asked the students to write a letter to municipal commissioner so that the awareness and the social responsibility, the values mentioned in the NCF 2005 can be effectively implemented in the school itself. Again here the question arise that whether students were able to construct their knowledge by their own. To certain extent it was found

to happen, The concept building was easy when the concept made familiar with the students by taking the suitable use of digital technology.

### **CLASS OBSRVATION 3: CLASS VI SUB : MATHS, TOPIC : 3 –DIMENSIONAL SHAPE**

Class observation in the Mathematics classroom has been done. Classrooms are spacious and airy specifically meant for the activities, practicals, group discussion, debate, quiz can be conducted. Classroom also has the two types of board one is digital and other is white board. Class contains 32 students where number of girls is only seven. Following are the glimpses' of the class room mathematics teaching learning process.

(Teacher has brought some of the teaching aids with him kept on table. Students started looking at the various teaching aids of different shape)

Teacher: Children we are going to learn today the very important lesson which related to our day to day life

Student 1: Sir what is this shape called?

Teacher: That we will discuss after sometimes, first you tell me have you ever seen the plan figures

Students: yes sir (in Corus)

Teacher: Then tell me some of the names of closed plane figures Student 2: sir, triangle, circle (teacher drawn

the figure on the board) Teacher: Do anybody knows the plane figure apart from these Student 1: sir, cube

(Other students replied that the answer given by that child is incorrect) Teacher: Why it is not correct?

Students 3: sir because it is plane but it has many plane surface Teacher: Does anybody else want to share something?

Student: Sir, cube is not the plane surface because ice cubes which I seen in my home are not plane

Teacher: ok, then let's see what the three dimensional shape means. This is called cube and another solid is called cuboid,. They occupy the space and have length breadth and height. That's why it is called three dimensional shapes.

Student 2: Can car be called a three dimensional figure? Teacher: What do you think? Does it look like a

cuboid? Students: No sir , it does not look like three dimensional shape

Teacher: There are many three dimensional shapes. Pyramids, cone and cylinder

Student2: yes, the freeze in my home looks like a cuboid and the football we play as also a three dimensional shape.

Teacher : Can you tell me some of the other examples of three dimensional shapes .Note it down in your book and then tell me after 2 minutes , those who will be able to write more will get some awards

(Students started writing the names of some of the objects they see in everyday life. Students have written more objects name, Teacher told the student to clap for him a given a pencil as a gift)

Teacher show the figure of pyramid. He asked the student to name it. Five students raised the hand. Teacher asked the question to other one who did not raise the hand. He was unable to give the answer, gift as a pen found very curious to give the answer but the teacher ignored him. By the time students started gossiping about the shapes classroom became somewhat noisy. Teacher raised the voice and ordered the students to sit properly. Students became silent for a while) Teacher: Now take empty matchboxes with you. Take out the pencil from your box and draw the outlines of it on the sheets provided. Two students in the class failed to bring the compass box.

Teacher: Have you drawn the outline? Students: (In Corus) yes sir

Teacher: What are you observing? Are the all outlines looking similar? Student 4: No sir only two- two are similar.

Teacher: What are these two sides which look same? Are they opposite sides of the matchbox?

(One child stood and told sir that his matchbox is different and all outlines are different. Teacher gave him some time to draw it again; finally child agreed that it is same.)

Teacher explained the students that how the opposite sides of the cuboid is same. After doing this activity he also gave wooden solid cube to every child and asked the students to draw the outline again for the cube)

Students became busy to draw the outline of the cubes and come to the conclusion that all six outlines are same.

Teacher: What is your observation? Can anybody share (many students raised their hands; Teacher called two student in front and told them to share their observation.

Students shared that in the case of cuboid pairs are same but in the case of cube all outlines are similar.

Teacher explained that these outlines are opposite sides of mainly cuboid and cube. Students deduce the conclusion that in case of cuboid, all the six faces are not of same size. Only the opposite sides are same while in case of a cube, all six faces are of same square shape Teacher brought some another solids such as cones and cylinder, pyramids, triangular pyramids he enquired about the various object which look like these solid. He tried to connect the pyramid with the pyramid of the Egypt. He took the help of the smart class and shown the videos related to pyramid. He also explains and at the same time tried to involve the students to participate to differentiate the objects. He drawn the required figures on the board and tried to deuce the properties of various three dimensional object by taking the help of the students. at the end of the class he conducted the short class worksheet took the rounds of the class and observed that some of the students are solving and finding the accurate answer those who were finding some difficulty teacher personally paid attention towards them and tried to complete their work **REFLECTION:**

While observing the one thing is worth noting that the teacher has given more opportunity to the students to construct their own knowledge while deducing the properties and differences of the various solid he has given

different types of cubes and cuboid to the students. Students worked on these with these physical objects with great interest in a group. What constructivism says that "Conceptual knowledge cannot be transferred from one person to another. Rather it must be constructed by each child solely on the basis of their own experience." (Cognitive psychology and Mathematics education – Lyn D. English – page no 11). Students can be guided in deriving for themselves. When the teacher asked about the different cuboid shapes around them, they were able to relate the things which are in their home as children always attempt to make sense of procedures and explanation they hear or see from others. Children must be provided with some hands-on activities which were observed in the class and the learning was taken place at various levels. When the teacher was drawing some of the figures on the board, Constructivism does not always mean the group discussion but it is the teachers' intention that determined the constructivist nature of the teaching. Here in this case as comparative to the above two classes' digital technology was not utilized except the picture of Pyramids. Since the students were able to relate the objects with the surrounding students found able to cope up with the ideas of three-dimensional shapes. It would have been more interesting and effective if the teacher would have used the digital board even for drawing the net of various objects. Simple quiz could have been conducted to evaluate the learning process. It was possible for the teacher to save the time by using the Smartclasses, so that along with the physical object which is generally made for the age group of pre-operational stage, learning would have been possible by the students of class VI as at this level students' spatial ability enhances and the students are able to think the abstract concept with visualization.

## CONCLUSION:

By observing the classes and the interviews conducted it has been found that not only the microsystem but also the Mesosystem plays a very vital role in the learning process. Since in the school children were from different social backgrounds all were not exposed to the use of digital devices in the classroom. Students were not given the chance to handle the digital technology but the teachers were at the center. But even though one can easily say that because of the use of technology in education the various difficult terminologies were able to reach the students specifically when the school is at the town and the learning resources are limited. Internet and the smart classes with well-equipped digital material is a very important tool to bring out the changes in the learning process. In the mathematics classes where the utilization of the digital device was limited children found it to be difficult to get the conclusion. But when the Social science class was handled with effective use of technology with the virtual tour of India it became easy for the students to learn even the concept which was not observed by the students in their immediate microsystem. The level of Mesosystem can be made narrower by utilizing the multimedia and the audio video clips available as well as made by the students. As the



Piagiantheory states that the child construct their knowledge by their own, If the help of digital technology is taken into the classroom, by active participation of the students it will be possible to merge the gap between the students of rural and the urban area. Vygotsky theories of social importance for the development of the child found more useful as the learning can be happened when at the ground level and in the society directly students can be participate like students were assigned the work to visit the blood bank as well as the students were asked to write the letter to the concerned authority to eradicate the problems faced by the society. After all the aim of the education is to make the better society, By taking the help of digital classroom the aim can be closure enough as the replica of the society can be observed in the smart multimedia classroom even though it is not possible for all the students to go directly at the site of the society but society itself can be brought in the classroom. For example one can -not make to happen the war of 1857 again but the glimpses of 1857 war can be studied in the classroom itself if the planned technological oriented pedagogy is used in the classroom.

## **CHALLENGES**

When we talk about the implementation of the technology in the classroom it is very essential to train the teacher so that it can be effectively utilized in the learning process. But by having the interview with teachers and the principal it was found that the planning of lesson itself becomes lengthy process. It increases the burden on the teacher particularly when the teachers are not well versed with the technology it becomes tedious activity for the teacher to conduct the regular classes according to the planning suggested by the Principal.

In the rural India when the range of internet and the speed is limited, to use the digital board and the internet facility is not such good idea. Most of the time there is electrical supply power cut observed by the much village and the town in such cases planning itself becomes the unplanned activity for the teacher.

Many Parents are not that much convenient about giving the highly cost digital devices in such cases homework assigned by the teacher to the students cannot be done simply relying on the technology.

Motor skill of the students can be reduced if only the technology is used and other physical activities be avoided. It also found that the aim of the learning changes from person to person that's why many parents ask generally that if the final examination is conducted by the pen and page why there is that much need of the technology in the learning process. By considering the

fact of poverty of the country and the amount of large proportion is below the poverty line how it will be possible for the people to be well versed with costly digital equipment. The environment of the school is not always in the favors of utilization of the technology in the school as there is a fear among the teachers about the substitution of the teaching job by the digital devices.

### QUESTIONARIES ASKED TO TEACHERS

Name of the teacher:..... Educational qualification..... Experience.....

Questions	Yes	NO	sometimes
1) Do you use the smart class board in the classroom?			
2) Do you planned the lesson by using digital board?			
3) Are you well versed with the handling of digital board?			
4) Have you attended any Orientation program related to digital device application in the learning process?			
5) Do you have the fear that technology will substitute the teacher?			
6) Are you in the opinion that students should use the digital devices in the classroom?			
7) Do you know about the ICT in education?			
8) Do you find that interest level of the students increases when the audio video are played in the class?			
9) Is your principle forcing you for utilization of smart class?			
10) Do you think that because of technology your burden got increased?			

### QUESTIONARIES ASKED TO STUDENTS

Name of the student:..... Class ..... Gender.....

Questions	Yes	NO	sometime s

1) Do you use the smart phone in the home?			
2) Is your parents giving you freedom to use the internet?			
3) Is the digital board always use in the class			
4) Have you find any changes in the classroom environment when the videos been played in the class?			
5) Do you have the fear about the use of technology?			
6) Are you in the opinion that students should use the digital devices in the classroom?			
7) Is your parents Income more than 3 lakh a year			
8) Do you find that interest level of the students' increases when the audio videos are played in the class?			
9) Is your teacher supporting you for smart class enabled homework?			
10) Do you think that because of technology your burden of study got reduced?			

### QUESTIONARIES ASKED TO PRINCIPAL

Name of the teacher:..... Educational qualification:..... Experience:.....

Questions	Yes	NO	sometime s
1) Do you motivate the use smart class board in the classroom?			
2) Do you help teachers to plan the lesson by using digital board?			
3) Are you well versed with the handling of digital board?			

4) Have you conducted any Orientation program related to digital device application in the learning process?			
5) Do you have the fear that technology will substitute the teacher?			
6) Are you in the opinion that students should use the digital devices in the classroom?			
7) Do you know about the ICT in education?			
8) Do you find that interest level of the students' increases when the audio videos are played in the class?			
9) Do you think that by ICT pedagogy is enhanced?			
10) Do you think that because of technology teachers burden got increased?			
11) Do you think that cognitive theories of learning can be practiced effectively by using Digitalized classroom teaching			
12) Have you seen the improvement in the academic result after utilizing digital classroom?			
13) Are the Parents supportive of educational technology in education?			

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