# CHAPTER – 2

## THEORETICAL ORIENTATION

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CHAPTER – 2
THEORETICAL ORIENTATION

2.1 INTRODUCTION

Theoretical orientation is the important part of the research studies. It states the theoretical concepts or the basic ideas on the topic and the work already done in the research studies, to attain an overall relevance and purpose. Theory is used to craft the null hypothesis, which is either proved or disproved by the research itself and illuminate the significance for the new study. The theory is the source of concepts and the connections among them that made it possible to produce hypotheses identify confirmations or refutations (Ritzer, 2007).1

The researchers can summarize the relevant theory from books and past studies. The theoretical orientation thus becomes a link between the research proposed and the studies which was already done. The value of theory depends on the clarity and coherence of their formulation and their adequacy to their conceptual frameworks (Metron, 1979).2

This chapter is concerned to the theoretical orientation concerning the teacher effectiveness, media utilization and use of ICT.

2.2 PRIMARY EDUCATION

India is divided into 28 states and 7 so-called “Union Territories”. Sasi Kumar (2014)3 mentioned that the school system in India has four levels: lower primary (age 6 to 10), upper primary (11 and 12), high (13 to 15) and higher secondary (17 and 18). The lower primary school is divided into five “standards”, upper primary school into two, high school into three and higher secondary into two.

Universal and compulsory education for all children in the age group of 6-14 was a cherished dream of the Government of India. This is evident from the fact that it is incorporated as a directive policy in article 45 of the constitution.
In the recent past, the government appears to have taken a serious note of this lapse and has made primary education a Fundamental Right of every Indian citizen. The pressures of economic growth and the acute scarcity of skilled and trained manpower must certainly have played a role to make the government take such a step.

The Indian government lays emphasis on primary education, also referred to as elementary education, to children aged 6 to 14 years old (“Education in India,” n.d.)\(^4\).

Under the Right of Children to Free and Compulsory Education Act 2009 published by Ministry of Law and Justice in the gazette of India on 26\(^{th}\) August 2009, Education has also been made free for children for 6 to 14 years of age or up to class VIII (Right of Children to Free and Compulsory Education Act 2009)\(^5\).

As per report submitted to Indian council for social sciences research by Sharma (2012)\(^6\), the country is yet to achieve the elusive goal of Universalisation of Elementary education (UEE), which means 100 percent enrolment and retention of children with schooling facilities in all habitations. It is to fill this gap that the Government has launched the Sarva Shiksha Abhiyan in 2001, one of the largest such programmes in the world.

Verma (2012)\(^7\) mentioned in the Report of the High-Powered Commission on Teacher Education Constituted by the Hon’ble Supreme Court of India that: Teacher is the medium to achieve this goal. Hence, the quality of teacher education to provide quality teachers is an important component for the success of this programme. The Report of the National Education Commission (1964-66) states “The destiny of India is now being shaped in her classrooms. This, we believe is no more rhetoric”. The key player in the process is the teacher.

Gujarat Council of Educational Research and Training (GCERT) is a pivotal institution at the state level for the enhancement of qualitative education at primary and secondary schools. Under the umbrella of GCERT, there are now 26 DIETs (District Institute of Education and Training) functional in 25 Districts. These DIETs impart pre-service and in-service training to the primary teachers of the State.

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The GCERT works as a prominent institution for implementing the policies, programmes and researches in the Gujarat State. It disseminates latest information with regard to modern trends and approaches in primary education, pre-service and in-service education, pedagogical advances in the country, wide use of distance education as a mode of training, organizing community awareness programmes and updation of curriculum of primary education in view of new and emerging concerns. The Council is committed to bringing about qualitative improvement in school education particularly Elementary Education, development of curriculum syllabi, instructional material and evaluation strategies to explore suitable solutions to educational challenges with the changing time (GCERT).

Today India aspires to emerge as the ICT leader among the knowledge-based societies and it does so with the education of children as a primary concern.

It is desirable that affordable ICT tools, techniques and various instructional media should be integrated into classroom instructions right form primary stage so as to enable students to develop their literacy and numeracy skills, higher-order thinking skills (critical thinking, creative thinking, problem solving) and collaborative and interpersonal skills. Most of the tools, techniques and tutorials are available in Open domain and accessible on web.

When used to support learning objectives in the Primary School Curriculum, ICT and instructional media can positively contribute to children’s learning across the curriculum. Perhaps most importantly, ICT and media facilitate the differentiation of the curriculum to suit the range of learning needs and styles of individual children. In this way, ICT and media can offer a powerful teaching and learning resource helping to ensure that all children can enjoy success as learners.

2.3 MEDIA UTILIZATION

Prior to the last century, teaching was considered as a rigid, formal and stereotyped process of transmitting knowledge. Education was taken as a bipolar process with teachers at the giving end and students at the receiving end. Teachers were considered to be the only source of knowledge, may be through manuscripts or printed materials.
Schools were the knowledge shops and teachers are the information managers. Emphasis was laid on rigid discipline, blind memorization and hard reinforcement. Verbalism was enforced and no audio-visual aids or materials were utilized in the field of education. Recently, learning has assumed more importance than teaching. It has been rightly observed by the International Commission on the Development of Education that there has been a change in the learning process which is tending to displace the teaching process. Multimedia systems have to now acquire more significance and educational technology has been popularly used for effectiveness.

The new era makes the educationists to realize that in education ‘learning’ is now important than ‘teaching’. The former is concerned with pupils whereas the later is concerned with pupils and teachers. The traditional concept of teacher as the only source of knowledge has been changed due to the advancement of science and technology. The traditional classroom with one teacher teaching students was mainly one way of communication is no longer effective in modern times due to dynamic nature of society. The change should be brought in teaching learning situation. So there is a need to introduce modern teaching learning process through improved means of educational technology.

Teaching methods in recent times have been moved from predominantly teacher oriented and controlled approach to student interactive system. Such a system requires a number of changes in the instructional procedure and the materials used for effective teaching. In a formal education system, the use of audio visual aids is useful for the classroom teaching. Undoubtedly, the instructional and pedagogical skills of the teacher, and the readiness of the students play significant role to make the classroom teaching effective. In the present period of educational technology, teacher should not depend upon any single method of teaching.

Development in the field of science and technology resulted in an increased availability of teaching materials which are known as audio-visual aids or techniques. Advances in technology have brought instructional materials especially the projected and electronic materials to the forefront as the most radical tools of globalization and
social development which have affected the classroom teaching-learning situation positively. They are the important landmarks in knowledge transfer.

Media assist educators to transmit the knowledge in an impressive way giving diversity to classroom teaching and making learning more effective.

Many teachers who use instructional media find that it can help them to improve motivation and learning, address students with different learning abilities, expose students to a wider world of information and experts and implement new teaching techniques. Case studies on pre-service teachers showed that the use of instructional media could capture the reality of the classroom (Kadzera, 2006).9

People acquire much of their knowledge by use of their senses. Psychologists have matched human senses with the respective percentages of learning that takes place. According to Mwololo (2009)10, the sense of taste accounts for 1%, touch 1 ½ %, smell 3 ½ %, hearing 11% and sight 83% of the total learning.

Most learners engage the sense of sight in communicating and gaining learning experiences. It is suggested that teachers need to engage use of instructional media during teaching as these will prompt learners to use their eyes during instruction. According to Seefeld (1984)11, students learn best when allowed to manipulate and interact with instructional media.

In a study of primary school teacher training colleges in Nigeria, Onasanya (2008)12 confirmed that instructional materials stimulate learning because firstly, student teachers get more attentive. Secondly, student teachers’ positive attitude generates more interest for lessons they learn or teach. This enhances student teachers participation in class activities, promotes their performance in teacher examinations and improves their teaching process.

Mohan et al. (2010) as cited in Akram, Sufiana and Malik (2012)13 opine in a study at India that 85% of the students are in favor of teaching methods that employ audiovisual aids as compared to typical lectures delivered without the use of audiovisual aid.
2.3.1 Definition of Media

The definitions of Media are as follows:

Ogunranti and Ihongbe (1981)\textsuperscript{14}, define visual aids as any picture, model, object or device which provides tangible visual experience to the learner purposely for introducing, building up and enriching ideas. They add that it clarifies difficult notions which could otherwise be difficult to explain.

The term “instructional media”, according to Romiszowski (1988)\textsuperscript{15}, refers to devices and materials employed in teaching and learning. It include hardware like radio, television, tape recorders, video tapes and recorders and projectors; and, software like transparencies, films, slides, teacher-made diagrams, real objects, cartoons, models, maps and photographs (Opoku-Asare, 2004)\textsuperscript{16}.

Scanlan (2003)\textsuperscript{17} indicates that instructional media encompasses all the materials and physical means an instructor might use to implement instruction and facilitate students' achievement of instructional objectives. This may include traditional materials such as chalkboards, handouts, charts, slides, overheads, real objects, and videotape or film, as well newer materials and methods such as computers, DVDs, CD-ROMs, the Internet, and interactive video conferencing.

According to Azikiwe (2007)\textsuperscript{18}, instructional media cover whatever the teacher uses to involve all the five senses of sight, hearing, touch, smell and taste while presenting his lessons.

Abimbade (1997)\textsuperscript{19} viewed educational media as a broad range of resources which can be used to facilitate effective and efficient communication in the teaching and learning.

Olumorin, Yusuf, Ajidagba and Jikayinfa (2010)\textsuperscript{20} define instructional materials in its simplest term as those materials that helps the teachers to teach with ease and the learners to learn without stress.

According to Adekola (2008)\textsuperscript{21}, instructional media are all available human and material resources which appeal to the learner’s sense of seeing, hearing, smelling,
tasting, touching or feeling and which assist to facilitate teaching and learning. Instructional media with its various types affect different senses and act as an integral part of teaching and learning process and thus helping to bring about meaningful experience.

The teaching aids have been recognized by different names such as instructional material (Kinder, 1959)\textsuperscript{22}, instructional technology (Brown, Lewis & Harcleroad, 1985)\textsuperscript{23}, instructional media (Heinrich, et.al, 1989)\textsuperscript{24} and audio-visual material (Dale, 1969; Saettler, 1990)\textsuperscript{25, 26}.

2.3.2 Types of media

The criteria for classifying media / teaching aids or instructional materials include the degree of expertise / technical skills needed for production, nature of the material, physiological parameter or sensory modality, the place the material is produced and miscellaneous characteristics.

For effective instructional delivery, media are classified under following categories:

1. Non-projected media

2. Projected and electronic media

3. Mass media

1. Non-projected media

Anyanwu (2003)\textsuperscript{27} asserted that non-projected materials are those materials that do not require any form of projection before they can be utilized. They include chalkboard/board flip chart, specimen, model, textual and non textual materials. Textual materials are the print materials such as textbooks, journals, periodicals, newspaper among others while the non-textual materials include charts, chalkboards, films, videotapes, audiotapes, realia, festivals and games.

Hughes-Hassell (2000)\textsuperscript{28} postulated that non-print materials i.e non-projected media make learning more concrete and real and identified non-print medias to include: still
pictures, posters, models, educational games, transparencies, slides, films, audios, motion picture, video tapes, computer diskettes and realia. Realia are real thing or objects.

2. **Projected and electronic media**

Projected and electronic media / materials are forms of media which could be visual, audio and audio-visual in nature that requires projection and electricity in their use for teaching and learning situation. This can be categorized into tape recorders / recording, radio, slide projectors, over head projectors, Episcope video cassette / video disc machine and computer instructional system. The computer has been found to be the most suitable and versatile medium for individualized learning because of its immerse capacity as a data processor used for different games by children.

3. **Mass media**

Mass media is one of the fastest medium of exchange of information which captures audience attention and interest, for example, television and radio is said to be the best Mass Media.

The process of mass communication through mass media has made it possible to transmit the same message to an infinite number of recipients over a geographical and/or temporal distance.

Mass media consists of the various means by which information reaches to large number of people, such as television, radio, movies, newspapers, and the Internet.

Television, Filmstrip, non-fiction and documentary programs have been widely used in schools. Most teachers use documentaries or other non-fiction materials as "enrichment" - to enhance their coverage of subject areas, particularly language arts, social studies, history, science and geography.

When teachers use television programs to convey specific message or content, this strategy can be highly effective in capturing student attention, motivating and informing students.
Different instructional materials are available to be used in teaching any subject effectively, but not all topics require the same type and quality of materials. These materials can be purchased, locally made, or improvised or even imported when necessary for effective instructional delivery.

### 2.3.3 Need and Importance of media in primary education

The use of various instructional media in instruction motivates and leads to acquisition of knowledge by both teachers and learners. It affords them the opportunity to experience immediate feedback and become a real, direct and purposeful experience.

Instructional media is designed to provide realistic images and substitute experience to reach curriculum experiences. The media is considered the most efficient facilitators in the education set up. This media is not a substitute for the teacher. Its utilization however, calls for an imaginative approach by the teacher who needs to constantly be on the alert for new ideas and techniques to make the lessons presented with different instructional media achieve effective outcomes.

Media can be used effectively in formal situation where students are working independently or teacher is working with other group of students. Media play a significant role in the education of exceptional children with disabilities in particular need special instructional treatment which is supplemented with adaptation and specially designed media for effective instruction of such students. The most common use of media in an instructional situation is for supplemental support of the instructor in the classroom to enhance learning.

Adekola (2008) summarized the benefits by saying that usage of instructional media increases the rate of learning by the learners, makes learning to be real and permanent, saves teacher’s time which would have been wasted on oral presentation and explanation of subjects contents, promote learners participation in learning activities, makes learning available to wider audience and helps teacher and learner to overcome physical difficulties in teaching and learning.
Naz and Akbar (n.d.) derived following conclusions about media / teaching materials that offer teachers powerful means to make their teaching effective to achieve specific classroom objectives:

- It helps students in greater acquisition of knowledge and ensures longer retention of the gained knowledge. This is mainly because it provides interactive learning environment due to which learning experiences becomes more meaningful and satisfying.

- It easily motivates the learners because it enhances a multisensory interest and thereby learning becomes more immediate and productive.

- It gives classroom instructions a more scientific base and enables teachers to transfer the knowledge in an organized way and more systematically.

- It is appropriate teaching tools which helps teachers to draw and fix the attention of students towards teaching. Attention and concentration betters students learning and improves classroom discipline.

- It enhances comprehension skills and the clarity of communication can be greatly enhanced by using them.

- It helps in stirring the imaginational, thinking process and the reasoning power of the students.

- It helps the teachers to save their time and energy. Since these effective materials can clarify the concepts easily, lots of time and energy can be saved by it.

- It also serves as ideal tools to review the learning outcome and to evaluate the completeness of certain learning.

- They open out greater scope for interactive learning and offers opportunities of individual learning.
The impact of use of media may increase by applying the following principles.

- Select material with appropriate attributes
- Introduce material to learner by relating it to prior learning and indicating its relationship to present objectives
- Present material under the best possible environmental conditions
- Get feedback from viewers / learners
- Evaluate inertial impact

Educational technology has added much to the effectiveness of the teaching learning process. The important contributions of educational technology to teaching learning process are described as under:

1. Individualized Instruction

   Educational technology assists in individualizing instruction by enabling individuals to use self-instructional programmes.

2. Improvement in the Quality of Teaching

   Educational technology plays a crucial role in the betterment of the teaching learning process. It enables us to utilize various enriched and motivating programmes through various media.

3. Solution to the Problem of Mass Education

   Educational technology aids in using various useful programmes designed and developed for a large number of students. These programmes are utilized through television, computers etc.

4. Ensuring equal Education Opportunities

   Educational technology have played a vital role in equalizing educational opportunities without taking into consideration the social, economic and geographical position of the learners.
5. Providing Continuing Education

The learners in service personnel and vocational works are kept in touch with the latest material through television lessons and self-instructional programmed material which is sent to them (Aggarwal, 1995).31

All kinds of teaching can be greatly improved by the use of audio-visual aids. Main merits are:

- Motivation
- Reality
- Concept Formation
- Interest
- Developmental Learning
- Reality of experience
- Continuity of thought
- Retention
- Formation of images
- Experience
- Interest and Attention
- Economy of time
- Other advantages

**Motivation:** While teaching it is necessary to motivate all students in the classroom. Many of them remain withdrawn during the course of lesson development. Only, a few are very enthusiastic and can take keen interest in classroom teaching and are eager to contribute in the knowledge development, even though all of them are supposed to gain equally and pass the same examination. Therefore there is a dire necessity to motivate the students to learn through participation. Audio-Visual aids are important to motivate the students.
**Reality:** The reality about the content which is going to be taught in the classroom can be presented in the classroom by using audio-visual aids such as pictures, charts, maps, and models. Linking teaching with these can bring reality in the classroom.

**Concept formation:** Thinking and reasoning is the core of concept formation. The use of audio-visual aids by minimizing verbalism and invoking thinking and reasoning through elicitations can lead to concept formation. This also helps in comprehending concepts.

**Interest:** The audio-visual aids when systematically and timely used to cater the high degree of interests in the students, as they are always interested in things which they can see, hear about, touch, taste and smell themselves. Interest always motivates the students to plan, make do and try to fabricate themselves.

**Developmental learning:** The learning process should always be developmental. The students cannot grasp everything at one time. They learn bit by bit. And sometimes they learn by their mistakes. The uses of audiovisual aids in teaching provide the necessary basis for developmental learning and, hence make the learning more permanent.

**Reality of experience:** The use of audio-visual aids in teaching offers a reality of experience to the students in the classroom which stimulates self activity on the part of the students. Self-activity generates self-confidence in them.

**Continuity of thought:** If the teaching does not invoke thinking in students it is not only a labour lost or wasted but harmful also. Teaching based on mere verbalism leaves the students mere listeners and passive acceptors. They do not learn but remain mere listeners and receivers. They can never be creator or inventors. Also, the process of education is related to the process of reminiscence. Only the process of thinking can invoke and bring out reminiscence which is really the process of education. The use of audio-visual aids in teaching can achieve this end. Their uses develop a continuity of thought in students which is necessary for real education.

**Retention:** The use of Audio-Visual aids contributes to the permanent retention of what has been communicated to the students in the classroom. Audio-Visual aids add to the
process of retentivity as they stimulate the maximum response of the whole organism of the students to the situation in which the teaching is done and learning takes place.

**Formation of images:** The Audio-Visual aids while properly used in teaching help in making and formation of right usages of things in the minds of the students. So this process helps in comprehension and learning.

**Experience:** The use of audio-visual aids provides avenues of gaining experiences which are not easily gained by mere verbal communication. The use of Audio-Visual aids in teaching can give sensuous experience which can contribute to imaginative efficiency, depth, variety and virtual learning.

**Interest and Attention:** The use of Audio-Visual aids in teaching catches the attention of the students and generates interest in them to know more which is essential for learning. The audio-visual aids further add to information given by teacher, motivate the students to think and act and stimulate their overall mental as well as physical activity.

**Economy of time:** A thing which can be explained in so many words can be easily communicated and grasped by a picture of a thing. Use of audio-visual aids saves a lot of teacher's as well as student's time. Now, there are many machines like overhead projector, film projector, film strip projector which economize teacher's time as well as energy.

**Criteria for selection of media**

One of the basic assumptions of instruction is that different ways of teaching will influence the learning process and its results. In particular, media have been regarded as potentially effective instruments for the improvement of teaching and learning. Almost all publications on instructional design, curriculum development, educational technology, or practical problems of school or university teaching deal with the problem of how to make best or better use of teaching aids, audiovisual equipment, learning materials, or media. They try to help answer the question: given an instructional task, which medium will be the most appropriate and effective to achieve the desired learning result?
So, the criteria for selection of media are:

1. **Task factors:** objectives, learning outcomes, learner capability, learning experience, content, variables, type of stimuli sense, or reception characteristics.

2. **Learner factors:** group size and location; intellectual abilities, cognitive styles, student interests and preferences, age, learning experiences.

3. **Instructional management factors:** instructional strategy and method, response demand, degree of teacher control, instructional events.

4. **Economic factors:** cost of hardware, software, production, maintenance and staff training.

5. **Technical factors:** technical quality, ease of handling, compatibility, flexibility to use, durability.

6. **Administrative factors:** availability, management of media resources, school architecture and equipment.

Also, it is essential to consider the generalized principles of selection of media that suggest several points to be kept in mind while selecting media. They are:

- **No one teaching aid or medium is best for all purposes**
  
  Recognize that no one medium, procedure, or student experience is necessarily best for learning a particular subject, for acquiring a particular skill, or for developing a specified desirable attitude or level of appreciation. By their nature, some subjects might be better suited for presentation by one medium rather than another.

- **Medium uses should be consistent with objectives**

  Be sure your uses of media are consistent with your objectives. Materials may be accurate and still be unsuitable because they fail to advance our specific learning purpose in a unit or problem.
• Users must familiarize themselves with the content of media

In order to adapt materials to specific programme purposes, the user must know them thoroughly – their content, how they may be used to the best advantage, the levels of difficulty in relation to competencies of your students – and conditions of availability that is, when and for how long you may have them.

• Media must be appropriate with respect to student capabilities and learning style

Be aware that student experiences, preferences, individual interests and capabilities, and learning styles are likely to influence results of using aids or media. For e.g. Students who read well and who enjoy reading, may be expected to benefit more from reading books than those who do not. But to attract and retain interest of slower readers and to help them to understand and profit from what they read, you may need to introduce, along with print items, various correlated audio-visual aids.

• Media must be appropriate for the mode of instruction

As you examine audio-visual aids or media, also consider their suitability for use in the instructional mode you have in mind: large-group instruction, small group activities providing for interaction, or independent study. It is obvious that, for independent study, the trend is towards simple audio equipment. A motion picture selected for use with a large group in a lecture hall will probably need to be 16mm in size; but for a small class or independent study assignments, 8mm format may be preferable.

• Media are neither good or bad simply because they are either concrete or abstract

Resources and learning experiences are not necessarily good or bad simply because they are presented through concrete or abstract means. It is more nearly accurate to consider media resources having special (but not necessary unique) advantages for certain teaching purposes.
• Media should be chosen objectively rather than on the basis of personal preference or bias

Don’t let your own preferences for particular media or audio-visual aids stand in the way of providing learning experiences your students need. Your own boredom with some media item, for instance, a film, may signal your need to examine it critically to be sure it is still up to date and suitable for uses you have in mind. It may also suggest your need for a new approach in using it – as an independent study assignment, for example, rather than as a group activity.

• Physical conditions surrounding uses of media affect significantly the results obtained

Some otherwise excellent media resources may become second-rate in their instructional effect when they are used in inadequate or inappropriate environments. Improper acoustics, uncontrolled or poor lighting, overheated rooms, stale air, noise pollution, and similar distractions are hazards to be avoided, preferably by means that you control. Thus, in each instructional effort, as you select media, be concerned with the conditions under which they will be used.

• Media should be worth the time, expense, and effort involved

Almost any study trip, dramatization, recording or telecast will have some value. Indeed, few organized experiences are completely valueless. The key issue, however, is whether a specific trip, dramatization, recording or telecast is more valuable than something else that might be substituted for it. In short, we should try to establish priorities.

Future expectations in an era of acute modernization

The world is changing fast. The demands on teachers and students are immense and expectations are mounting. In the emerging information society, today’s production methods, media or communication technologies can be overdue and obsolete tomorrow. In the future, there will be greater emphasis placed on the ability to:
1. Learn and to continue to learn independently and autonomously;
2. Communicate to others deliberately and on a differentiated basis;
3. Collaborate with others in a group;
4. Show social sensitivities;
5. Accept social responsibility;
6. Be ready and willing to be flexible, and to have experience of flexibility.

In the future, search will be for creative, self-confident, committed, communicative and socially competent persons/employees.

Futurologists believe that the educational institutions of the 21st century will have to take on a completely different shape. Drucker and Holden (1997) prophesied that, in view of the new media in education, more specifically – the digital revolution, “30 years from now big university campuses could become relics”.

So, situation today is serious. There is no doubt that it is an acute modernization crisis. Intact, the only treatment available is a bold wave of modernization such as never before in the history of the academic instruction.

The universities, colleges and the schools will have to prepare students for the information society. Both teachers and students will have to cope with, adapt and adjust to the new media. They must be able to work in virtual companies, organizations, working groups and project teams in the emerging ‘virtual economy’. This presupposes a considerable degree of ‘media competence’.

The curriculum must no longer be made uniform and fixed for long periods by means of degree course regulations, but be variable and adaptable to current needs, for example, in professional life. It must be related not only to individual learning requirements, but also take account of the challenges and demands of practitioners and anticipate future trends thereby adapting it to meet new societal, technical and employment requirements.
It must be possible to impart to students not only cognitive, but also methodical and social action skills. ‘Autonomy and integration’ must be the preferred aims of academic education. In general, there must be a ‘conversion from a teaching to a learning culture’. The student population will increase considerably in the coming years. It may not be possible to look after them with the traditional systems and approaches of teaching. For this reason, a different and cheaper teaching and learning system is imperative, which will have to adopt new media or communication technologies in education.

Teaching and learning must have an egalitarian character and be open as well as student, practice and future oriented. It will have to proceed with flexible teaching and learning programmes, which impart not only cognitive, but also communicative and collaborative, competence skills. Along with classical expository teaching and receptive learning, autonomous and self-controlled learning should be cultivated. In addition to this, students must also be prepared to prove themselves for the ‘virtual world’.

Educational / teaching skills of teachers will no longer consist of presenting content, but of enabling, facilitating and supporting research related learning, preferably by ‘discovering’. So, role of teachers will change considerably.

The educational institutions of the future will have a communications system that enables links to networks (Internet, the web), television and radio. They will have to maintain laboratories for developing audio, video and multimedia teaching and study programmes (including hypertext and hypermedia). The library will be converted to a great extent to online operations, once the catalogues have been digitalized and, for example, electronic journals, world literature and documents about current scientific – developments have been made available. To achieve all this, a technical platform will have to be developed in an educational institution.
Barriers in the use of media, more specifically the new media

- **Technophobia:** It is difficult to convince teachers who are skeptical and hesitant to co-operate and learn to accept and cope with change. Moreover, there is fear of increasing workloads and apprehension that new media may replace teachers.

- **Inadequate technical platform & infrastructure:** For implementing new media, a technical platform needs to be developed. The existing infrastructure facilities are inadequate to meet the demands of the large student population. In most of the schools, the teacher pupil ratio is 1:60.

- **Shortage of trained personnel who can train teachers:** For their new roles the teachers require to be trained in the use of new media. Both pre-service and in service teacher training will be required. Also there is inadequate access to technical advice, expertise and support (skills).

- **Financial constraints:** Funds are required for creation of additional infrastructure by educational institutions and also could require students to pay more fees.

- **Lack of proper software:** Much of the software used is “edutainment” which does not meet learning goals and so teachers are reluctant to use new technologies.

- **A Culture:** That emphasizes individual accomplishments and independence rather than collaborative teaching or research.

- Fear of **student plagiarism** from the web, because flexibility of new media, like electronic text makes plagiarism very easy and almost undetectable.

- Improper management of **intellectual property** with scope for piracy.

- **Unstandardized** evaluation criteria.
• **Time:** With times changing at a fast pace, we have less time and more work at hand to adapt in this era of acute modernization.

• **Updating and renewal of courseware:** Curriculum is changing at very fast pace. It makes it very difficult to develop good software, train teachers to use new software and by the time programmes are implemented, they become outdated.

### Initiating use of new media in school education

• Accepting new roles for teachers in the classroom from that of a lecturer to that of a facilitator and resource mobilizer.

• Using networks for the purposes of scientific information, communication and collaboration.

• Targeted individual searching and selecting, evaluating and contextually applying information, transforming information into knowledge.

• Establishing individual social contacts at several levels.

• Joint learning in small and larger working groups, whereby problems that students themselves have thought up are solved, for example in project work, new areas of knowledge are opened up for all those taking part, such as knowledge building communities.

• Making individual efforts to obtain advice / help and additional motivation through professional tutors, course counsellors, moderators and experts on a subject.

• Individual interactive work with CD ROMs, a medium that offers a great number of educational opportunities.

• Individual participation in virtual courses of lectures, virtual seminars, virtual teaching in a college class, virtual examinations.

• Studying at virtual universities.
It is obvious that the above changes cannot be met readily within the framework of traditional forms of teaching, such as lectures, seminars, classes and teaching in laboratory courses. So, new media will have to be sought for guided self-study and self-study that will provide the following specific learning activities:

- Working independently through self-instructing study programmes.
- Working independently through learning packages in different media (e.g. tapes and videos)
- Discussions (face to face or through communication media), with tutors and counselors that students initiate themselves, the course of which is also determined by the students.
- Solving learning and examination problems relatively frequently for the purposes of controlling the students own progress.
- Corresponding with persons responsible for correcting written assignments.

Initiating use of new media in classroom which are designed for guided self-study and self-study will facilitate above mentioned learning activities.

New media or communication technologies will continue as significant influences in social changes we now understand as globalization. Educators need to take these matters seriously, debate them critically, and then move forward positively to develop their practices for using new technologies (and other means) in ways which have real educational potential and merit. In this way, educators will be at the leading edge and not the bleeding edge. So, we are heading for changed roles of both teachers and students. Staff will have to be continuously trained to adapt themselves to the new media with full administrative support and accessibility of the media to both the teachers and students.
2.4 USE OF ICT (INFORMATION AND COMMUNICATION TECHNOLOGY)

With its rapid development, an information and communication technology (ICT) is indispensable to human society. Its integration in schools or universities is essential in order to achieve various objectives, as well as to improve the quality of lessons. The development of technology has produced numerous ICT tools that are essential and useful in the human development process (Mbaeze, Uk wandu & Anudu, 2010). ICT increasingly influences different aspects of our daily lives such as work, business, teaching, learning, leisure and health (Gulbahar & Guven, 2008). Since ICT is a crucial element in the advancement of society, every person should become technology-competent.

Thus, all schools have to be equipped with the necessary ICT tools in order to provide the next generations with the needed tools and resources to access, use and attain the expected skills for a modern society. This is extremely important with universities, where students are trained with the knowledge and skills to prepare for a new turning point in their life.

ICT could potentially facilitate the obtainment of relevant life skills that support the economic and information development process, if it is carefully integrated into education (Sara, Brown & others, 2010). According to Light (2009), ICT can help students deepen and construct their own knowledge, as well as develop complex thinking skills, when it is successfully integrated into a high-quality learning environment.

Sansanwal (2009) in his work, the use of ICT in teaching-learning and evaluation is of the opinion that IT was limited only to the textual mode of transmission of information with ease and fast but the information not only in textual form but in audio, video or any other media is also to be transmitted to the users. Thus the ICT = IT + other media has opened new avenues like, online learning, e-learning, virtual universities, e-coaching, e-education, etc.
Educational systems around the world are becoming increasingly pressured to apply the new ICT tools to their curriculum to provide students with the knowledge and skills that they need in the 21st century.

The ICT brings more rich material in the classrooms and libraries for the teachers and students. It has provided opportunity for learner to use maximum information senses to get the information. It has broken the monotony and provided variety in teaching-learning situation.

ICT is a powerful tool to support innovative methods of teaching, learning, and support innovation management education, thus contributing to improving the efficiency and quality of education.

ICT provides powerful tools that may help in transforming the present isolated, teacher-centered, and text-bound classrooms into rich, student-focused interactive knowledge environments.

Peck and Domcott (1994) outlined ten reasons that technologies should be used in schools:

1. Technology enables teachers to individualize instruction, which allows students to learn and develop at their own pace in a non-threatening environment;
2. Students need to be proficient at accessing, evaluating and communicating, the information;
3. Technology can increase the quantity and quality of students' thinking and writing through the use of word processors;
4. Technology can develop students’ critical thinking and allowing them to organize, analyze, interpret, develop, and evaluate their own work;
5. Technology can encourage students' artistic expression;
6. Technology enables students to access resources outside the school;
7. Technology can bring new and exciting learning experiences to students;
8. Students need to feel comfortable in using computer, since they will become an increasingly important part of students’ world;

9. Technology creates opportunities for students to do meaningful work, and;

10. Schools need to increase their productivity and efficiency.

Thus, teachers are expected to make good use of modem teaching technology and develop effective teaching resources.

Murphy (1995)\textsuperscript{39} summarizes the learning outcomes that result from the use of technology in classroom as following: (1) social growth, (2) problem solving, (3) peer teaching, (4) independent work, and (5) exploration.

Pelgrum (2001)\textsuperscript{40} identified several reasons why technologies in general and computers in particular might be important to schools. These included rationales relating to social and economic interests, such as reducing the costs of education, supporting the computer industry, preparing students for work and for living in a society permeated with technology, and making the school more attractive to its potential clients. Public initiatives have intended to spread the use of computer technology in schools by implementing computer laboratories and embedding actual classrooms with digital technologies to assist and support current classroom learning (Kozma & McGhee, 2003)\textsuperscript{41}.

2.4.1 Definition of ICT

ICT can be broadly defined as “technologies that facilitate, by electronic means, the acquisition, storage, processing, transmission, and disseminating of information in all forms including voice, text, data, graphics and video” (Michiels & Van Crowder, 2001)\textsuperscript{42}.

ICT allows many people to generate and disseminate information, thus playing an active role in the process of interaction between professionals, learners, policy makers, peers etc. (Leach & others, 2005)\textsuperscript{43}.
According to UNESCO, "ICT is a scientific, technological and engineering discipline and management technique used in handling information, its application and association with social, economical and cultural matters".

Sansanwal (2000) defined ICT as the use of hardware and software for efficient management of information, i.e. storage, retrieval, processing, communication, diffusion and sharing of information for social, economic and cultural upliftment.

In the words of Ogunsola (2005) ICT is an electronic based system of information transmission, reception, processing and retrieval, which has drastically changed our way of thinking, living and even the environment in which we live. ICT includes such technological tools as computers, internet, broadcasting technologies (radio and television) and telephone.

Darnton and Giacoletto (1992) defined ICT as the systematic study of artifacts that can be used to give form or description to facts in order to provide meaning or support for decision making, and artifact that can be used for the organization, processing, communication and application of information.

ICT can be broadly defined as “technologies that facilitate, by electronic means, the acquisition, storage, processing, transmission, and disseminating of information in all forms including voice, text, data, graphics and video” (Michiels & Van Crowder, 2001).

2.4.2 Need and Importance of ICT in primary education

ICT has very strong effect in education and it provides enormous tools for enhancing teaching and learning. ICT supports teaching and learning processes in a range of disciplinary fields such as the construction of new opportunities for interaction between students and knowledge; accessing information etc. ICT can have a useful effect on teaching and learning if it is used under right conditions including suitable sources, training and support. ICT also offers the potential to meet the learning needs of individual students, to promote equal opportunity, to offer learning material, and also promote interdependence of learning among learners (Leach, Ahmed, Makalima & Power, 2005 as cited in Cavas B. & Cavas P., 2009).
During the process of combining ICT with education, teachers’ attitude towards using knowledge besides their talent and desire will be a crucial point affecting the results of application. The basic agent for establishing and working this system is teachers. It is argued that successful integration of ICT in education enables teachers to transform instruction from teacher-centered to student-centered where learners may interact with their peers and use the computers and Internet for their own learning needs. However, many teachers do not regard themselves fully-equipped, comfortable and sufficient in using ICT in educational settings, and they feel more confident with their traditional teaching styles (Hawkins, 2002)49.

Integration of ICTs in education has a positive impact on the learning environment. ICTs act as and provide students and teachers with new tools that enable improved learning and teaching.

According to Haddad and Jurich (n.d.)50, ICTs in schools provide an opportunity to teachers to transform their practices by providing them with improved educational content and more effective teaching and learning methods. ICTs improve the learning process through the provision of more interactive educational materials that increase learner motivation and facilitate the easy acquisition of basic skills. The use of various multimedia devices such as television, videos, and computer applications offers more challenging and engaging learning environment for students of all ages.

**ICT in School Education in the Developed World**

In the developed countries, and the urban elites of advanced economies, twenty-first century education integrates technologies, engaging students in ways which were not previously possible, creating new learning and teaching possibilities, enhancing achievement and extending interactions with local and global communities. Students live in a world that has seen an information explosion and significant and rapid social and economic changes.

**ICT in School Education in the Developing World**

In the developing world, ICTs are used largely to increase access to and improve the relevance and quality of education. ICTs have demonstrated potential to increase the
options, access, participation, and achievement for all students. The unprecedented speed and general availability of diverse and relevant information due to ICT, extends educational opportunities to the marginalized and vulnerable groups, among the other disadvantaged.

Teachers and learners in the developing world are no longer solely dependent on physical media such as printed textbooks which are often outdated. With today’s technology, one even has the ability to access experts, professionals, and leaders in their fields of interest, around the world at any given time.

In India, various ICTs have been employed over the years to promote primary and secondary education. These include radio, satellite based, one-way and interactive television, and the Internet.

Government of India has announced 2010-2020 as the decade of innovation. Reasoning and Critical thinking skills are necessary for innovation. Foundation of these skills is laid only at primary level of education. Students who enter school are very curious, creative, and capable of learning many things. At this level, statement “Picture is worth than thousand of words” is very much true in case of teaching – learning process. Befriending ICT in the initial stages of education will help young people come to terms with what lies ahead.

Students studying at this level understand more through animated pictures. Hence if the same environment is created in schools by using ICT for teaching kids at primary level may bring drastic changes in the education scenario. With the help of ICT tools students at this level are able to grasp a lot by hearing voices or sounds and animated motion of various animals. Language learning is also taught at this level. To know a new language at this age is easier as compared to other levels. Multimedia projector & computer can be used to teach phonetics and pronunciation. Lessons, poems & lectures by eminent scholars stored in computers or other ICT tools can easily be shown to the students at any time and again anywhere. Such type of teaching and learning retains for long time in the minds of the children.
ICT equipment reflects the real world, builds on pupils’ experiences and allows them opportunities to understand how, why, when and where different forms of technology are used in everyday life. Pupils can use computers to work creatively with painting or music software, or learn more about literacy and numeracy. Software can produce different environments for pupils to explore that they could not otherwise experience.

It is desirable that affordable ICT tools and techniques should be integrated into classroom instructions right from primary stage so as to enable students to develop their requisite skills.

ICT is being utilized in every part of life. Due to the increasing importance of the computer, students—the future citizens cannot afford to keep themselves aloof from this potential medium. In education, use of ICT has become imperative to improve the efficiency and effectiveness at all levels and in both formal and non-formal settings. Education even at school stage has to provide computer instruction. Profound technical knowledge and positive attitude towards this technology are the essential prerequisites for the successful citizens of the coming decades.

2.5 ATTITUDE

Attitude is described as the internal state that influences or moderates the individual’s personal action. It is a complex state of human organism, which affects his behaviour towards other things and events. It is a system of beliefs, a state arising from a conflict or disparity in belief (Festinger, 1957). Festinger’s views tend to point out the cognitive aspect of attitudes, while Krathwohl, Bloom and Masia (1964), have given the learning outcomes of attitudes in the affective domain.

Attitude is a positive or negative evaluation of a person, place or thing. Attitude may be based on direct personal experience with the object or person in question or indirect, hand experiences.

All individuals have some feelings towards the objects in their environment: positive or negative; favourable or unfavourable. These feelings may range from very mild responses which rarely affect a person, to strong emotional reactions which exert a marked directive effect on the individual and his behaviour (Laycock & Munro, 1966).
The predominant role of attitude in determining thought, memory and learning processes has been recognized by psychologists. Whatever is learned depends to some degree on the attitudes of the learner, which means that children’s learning depends on their feeling (favourable or unfavourable) towards teachers, course of study and school in general (Travers, 1963)\(^54\).

### 2.5.1 Definition of Attitude

“Attitude“ is a broad term covering almost all the important fields of human knowledge, is especially prominent in the field of education. It is the guiding force behind all human action.

Good (1945)\(^55\) in the Dictionary of Education calls it a state of mental and emotional readiness to react to situations, persons, or thought in a manner in harmony with a habitual pattern of response previously conditioned to or associated with these stimuli.

McDonald (1962)\(^56\) defined attitude as a predisposition to action, a state of readiness to act in a particular way. They are generalized states of the individual, which lead to or result in a wide variety of particular ways of behaving.

Fishbein and Ajzen (1975)\(^57\) identified three essential features of attitudes: attitude is learned, it predisposes action and such actions are consistently favourable and unfavourable toward the object.

Eagly and Chaiken (1993)\(^58\) defined attitude and tendencies to evaluate an entity with some degree of favour, disfavour, ordinarily expressed in cognitive, affective and behaviour responses. The cognitive component involves a thought or belief about something that may be either true or false. The affective component involves liking or disliking. The behavioural component is the reaction tendency; one of the ways in which an individual can express evaluation of the object.

Chaiken (2001)\(^59\) referred to attitude as a psychological tendency that is expressed by evaluating a particular object or entity can be virtually any ‘thing’ in person’s internal or external social environment.
Scholl (2002) defined attitude as a mental predisposition to act that is expressed by evaluating a particular entity with some degree of favour or disfavour. Individuals generally have attitude that focus on objects, people or institution.

Thus, attitude is more or less stable set of feelings, opinions, preconceived notions, ideas involving certain kind of experience and readiness with an appropriate response. People can hold attitude of varying degrees of favourability towards themselves and towards any discriminable aspect of their environment.

From its inception, attitudes are considered behavioural dispositions, they direct and determine the action of individual in a particular manner towards certain objects, persons or ideas. Additionally, attitudes are relatively enduring evaluations stored in long-term memory rather than transitory psychological states.

**Components of Attitudes**

Attitudes are comprised of four components (Scholl, 2002).

1. **Cognitions (Mental Component):** Cognitions are our beliefs, theories, expectancies, cause and effect beliefs, and perception relative to the focal object.

2. **Affect (Emotional Component):** The affective component refers to our feeling with respect to the local object such as fear, liking or anger.

3. **Behavioural Intentions (Action Component):** Behavioural Intentions are our goals, aspirations and expected responses to the attitude object.

4. **Evaluations:** Evaluations are often considered as the central component of attitudes. Evaluations consist of the imputation of some degree of goodness and badness to an attitude object. When we speak of a positive or negative attitude towards an object, we are referring to the evaluative component. Evaluations are function of cognitive, affect and behavioural intentions of the object. It is not often the evaluation that is stored in memory, often without the corresponding cognitive and affect that were responsible for its formation.
2.5.2 Teacher’s attitude towards Media utilization

The way teacher view the role of media in classroom teaching will to a large extent determine the level and degree of its usage. Teacher forms an impression which is favorable or otherwise, depending on specific traits teacher attribute to media. Teacher perception of media is predicted upon what they feel media can do in teaching-learning process.

Orakwe (2000)\textsuperscript{62} asserts that instructional media are gradually finding their ways into the classroom where modern and versatile teachers are exploiting new ways of transferring learning to the younger generation through the use of prints, visuals and audios or the various combinations of these trios which make up all we have in instructional media. Thus instructional media are the information dissemination devices used in the classroom for easy transfer of learning.

Ema and Ajayi (2004)\textsuperscript{63} opined that instructional materials creates change and progress only when the teacher is knowledgeable and knows how to make use of it thus portraying the professional attributes of the teacher and the general knowledge or his creativity in selecting, developing and using instructional materials effectively.

Effective communication is the outcome of careful selection of appropriate medium or combination of media available by an effective teacher. Hence an instrument for accelerating the pace of all human transformation, to shake – off inertia in people, achieve mobilization and direct their productive forces in improving their living condition. This shows the impact of the teacher in influencing the future development and growth of a learner. The success of using teaching aids to meet the teaching objectives demands effective use and communication skills of the teacher to satisfy instructional delivery.

Arousing interest among students, teaching in accordance with their interest and wishes, showing them how to gain information and enabling them to transfer the gained knowledge to the areas necessary for them and to share them, should be the objectives of educational system.
Teachers in the system of education are thought to be the most important factors to realize those goals. Besides having enough knowledge and skills in this area, the teachers who will realized the material supported education using educational technologies, should also believe in the benefits of utilizing material in lessons and should be interested, willing towards this area and develop a positive attitude towards it.

2.5.3 Teacher’s attitude towards Use of ICT

The success of any initiatives to implement technology in an educational programme depends strongly upon the support and attitudes of teacher educators involved. It has been suggested that if teachers believed or perceived proposed computer programme as fulfilling neither their own nor their students' needs, they are not likely to attempt to introduce technology into their teaching and learning. Among the factors that affect the successful use of computers in the classroom are teachers' attitudes towards computers (Huang & Liaw, 2005)\(^64\).

According to Yusuf and others (2012)\(^65\), the teachers must have the competence and the right attitude towards technology if the gains of IT would be realized. In addition, attitudes refer to one’s positive or negative judgment about a concrete subject. He maintained that attitudes are determined by the analysis of the information regarding the result of an action and by the positive or negative evaluation of these results. In other words, if the attitude of a person is negative towards a thing, it is likely that his disposition will be negative and conversely. This means that there is always a positive relationship between teachers’ attitude and their use of ICT. More positive attitudes towards the computer were associated with a higher level of computer experience as concluded by Sara, David and Leonards (2011)\(^66\).

According to Spacey, Goulding and Murray (2003)\(^67\), attitudes – chiefly positive attitudes – are assumed to be fundamental in the acceptance, implementation and success of new technologies.

Achieving a meaningful use of computer technology in the field of education can be influenced by many factors. One of these factors is teachers’ attitudes towards the use
of technology in teaching and learning process. Research shows that the success of technology use in the educational settings largely depends on teachers' attitudes toward technology use (Albirini, 2006; Baylor & Ritchie, 2002). Teachers’ attitudes are considered as a major predictor of the use of new technologies in the educational settings (Albirini, 2006). Thus, their attitude towards computer can play an important role in the acceptance and actual use of computers. The successful utilization of technologies in the classroom depends mainly on the teachers’ attitudes toward these tools (Kluever, Lam & Hoffman, 1994). Thus, it can be concluded that the attitude further related to the usage frequency of technology and usage amount of the technology.

An attitude plays an important role in determining people reactions to situations. A review of the psychological literature reveals diverse definitions of attitudes. Fishbein (1975) defined attitude as “a learned predisposition to respond to an object or class of objects in a consistently favorable or unfavorable way”.

Attitudes are key factors in whether teachers accept computer as a teaching tool in their teaching practices. Correspondingly, a number of studies were carried out to determine teacher attitudes toward computer use.

In order to use technology in the classroom effectively, teachers’ attitude toward technology should be positive and they should be trained in using the modern technologies in the field of education.

2.6 TEACHER EFFECTIVENESS

Effective teachers are not thinking about what to do; they are responding in a predictable manner to the student behaviour. In establishing a productive learning environment, effective teachers are recapturing instructional time that is often lost in administrative activities, discipline and transitions.
2.6.1 Definition of Teacher effectiveness

Kulsum (2000)\textsuperscript{73} stated that teacher effectiveness includes characteristics of a teacher, his personality, attitudes etc., and process like teacher-pupil interaction and production variables like outcomes of teacher-learning process, namely pupil achievement.

Reiman and Thies-Sprinthall (1998)\textsuperscript{74} revealed that teachers at the highest levels of professional expertise and psychological development were reflective; capable of understanding the assumptions; beliefs, values behind choices; capable of balancing the students intellectual achievements and interpersonal learning in the classroom; used a collaborative approach with students to control the classroom and encouraged creativity and flexibility to create interactive classrooms.

Andersen (1979)\textsuperscript{75} opined that an effective teacher is one who produces positive outcomes in all three domains of learning: positive student affect, behavioural commitment to the course content and student cognitive learning.

Positive affect is central to understanding students’ perception of effective teaching. So an effective teacher is the product of number of variables they may be age, experience, sex, academic, qualifications, marital status, income and in-service programme.

Glass (2011)\textsuperscript{76} opined that effective teachers use different resources to plan and structure learning opportunities; monitor student progress formatively, adapting instruction as needed; and evaluate learning using multiple sources of evidence ,contribute to the development of classrooms and schools that value diversity and civic-mindedness and collaborate with other teachers, administrators, parents, and education professionals to ensure student success .

Chayya (2001)\textsuperscript{77} while summing up the characteristics of effective teaching, states that effective teachers take personal responsibility for student's learning, determines the difficulty of the lesson with the abilities of the students, give the opportunities to students to practice newly learned concepts, maximize instructional time to increase content coverage, provide direction and control of student learning, use a variety of instructional, verbal methodology and visual aids, try to elicit responses from students
each time a question is asked, present material in small steps, encourage students to reason out, initiate classroom dialogues, encourage independent thinking, problem solving and decision making, and provide methods of learning with mental strategies for organising and learning the content being taught.

Elliott, Kratochwill, Cook and Travers (2000) stated that effective teaching requires more than use of different teaching methods. Teachers need to know their students well and be able to adapt their teaching styles to a particular classroom and to individual students.

So, effective teacher is a keystone of the arch of national education. Teachers are the backbone of the nation. No nation can think of progress without the efforts of its teachers. The effective teacher is the planner, messenger, supervisor, evaluator, motivator, guide and human architect. There is no replacement of the teacher in education system.

So it can be concluded that effective teachers possesses well balanced personalities, good character and positive attitudes towards the profession and shows more emotional maturity, satisfaction in life, higher level of intelligence and creativity than ineffective teachers. In the classroom effective teachers use various teaching skills, appropriate strategies to solve the classroom problems and create excellent environment for learning, whereas ineffective teachers can not show such type of classroom behaviour. Teacher effectiveness can also be assessed from the students’ achievement and teacher’s place in the school and community.

2.6.2 Factors affecting Teacher effectiveness

Teacher effectiveness greatly depends on teacher clientele. The teachers attain the needed competence in their roles and functions such as the preparation and planning for teaching, classroom management, knowledge of subject matter, vocational knowledge, emotional control, moral values, personal characteristics and interpersonal relations. Teacher effectiveness demands a contextual platform wherein the past experiences encompassing teaching components with all contents and methods play a very significant role. Besides, qualitative position of the pupils, classroom
environment, peer environment, teacher’s involvement, pupil response and individual development are the parameters which affect the teacher effectiveness.

Effectiveness of teacher stems from a combination of knowledge, skills and personal characteristics (Katz, 1993)\textsuperscript{79}, the characteristics which are correlated with effectiveness are: good knowledge of subject matter, ability to organize learning materials, ability to communicate his knowledge to the students successfully and to deal with classroom situations (Gupta & Jain, 2007)\textsuperscript{80} and personal characteristics that is enthusiasm, effective communication, adaptable to change, a lifelong learner, competent, accepting others, patient, willingness to take risks, flexibility, creativity, hardworking and sense of humour (Taylor & Wash, 2003; Colker 2008)\textsuperscript{81,82}. An effective teacher helps the students in the development of basic skills, understanding, proper work habits and desirable attitude, value judgment and adequate personal adjustment (Ryan, 1969)\textsuperscript{83}.

The characteristics of an effective teacher have been summed up by Krishna and Nightingale (1994)\textsuperscript{84} as follows:

- He can teach using different methods of teaching, employing a variety of audio-visual aids.
- He should have moral prestige.
- He should have intellectual depth.
- He should have a sense of humour.
- He should be man of all-round personality.
- He should be confident and at ease while teaching.
- He has a good relation with the pupils.
- He manages the class well.
- He stimulates and motivates pupil to think independently.
- He explains the points clearly.
- He should be resourceful in providing the varied experiences to the students.
Thus the role and responsibilities of teachers are not limited to teaching but rather have been multifarious, multidisciplinary and multidimensional in order to ensure effectiveness of teaching.

So, effective teachers take personal responsibility for students learning, determines the difficulty of lesson with the ability of the student, give the opportunities to students to practice newly learned concepts, provide direction and control of learning, use a variety of instructional, verbal methodology and visual aids, present material in small steps, initiate classroom dialogues, encouraging independent thinking, problem solving and decision making and provide methods of learning with mental strategies for organizing and learning the content being taught. In this way effective teacher is one who has clear concept of the subject matter, ability to write clear objectives for his/her course, ability to organize learning materials, ability to communicate his/her knowledge to the students successfully and deal with classroom situations.

### 2.7 SUMMARY

The traditional classroom with one teacher teaching students was mainly one way of communication is no longer effective in modern times due to dynamic nature of society. The change should be brought in teaching learning situation.

Effective teachers take personal responsibility for students learning, determines the difficulty of lesson with the ability of the student, give the opportunities to students to practice newly learned concepts, provide direction and control of learning, use a variety of instructional, verbal methodology and visual aids, present material in small steps, initiate classroom dialogues, encouraging independent thinking, problem solving and decision making and provide methods of learning with mental strategies for organizing and learning the content being taught.

Development in the field of science and technology resulted in an increased availability of teaching materials which are known as audio-visual aids or techniques. Advances in technology have brought instructional materials especially the projected and electronic materials to the forefront as the most radical tools of globalization and social development which have affected the classroom teaching-learning situation positively.
Instructional media can help to improve motivation and learning, address students with different learning abilities, helps to retain information in learner’s mind, stimulate learning, expose students to a wider world of information and experts and implement new teaching techniques.

Different instructional materials are available to be used in teaching any subject effectively, but not all topics require the same type and quality of materials. These materials can be purchased, locally made, or improvised or even imported when necessary for effective instructional delivery.

New media or communication technologies will continue as significant influences in social changes we now understand as globalization. Educators need to move forward positively to develop their practices for using new technologies in ways which have real educational potential and merit.

With its rapid development, an information and communication technology (ICT) is indispensable to human society. All schools have to be equipped with the necessary ICT tools in order to provide the next generations with the needed tools and resources to access, use and attain the expected skills for a modern society.

ICT can help students to deepen and construct their own knowledge that they need in the 21st century, offer the potential to meet the learning needs of individual students, promote equal opportunity and promote interdependence of learning among learners, develop complex thinking skills, provide opportunity for learner to use maximum information senses to get the information and help in transforming the present isolated, teacher-centered, and text-bound classrooms into rich, student-focused interactive knowledge environments.

Foundation of skills like Reasoning and Critical thinking skills are necessary for innovation which is laid only at primary level of education. It is desirable that affordable ICT tools and techniques should be integrated into classroom instructions right from primary stage so as to enable students to develop their requisite skills.
The teachers who will realize the material supported education using educational technologies, should also believe in the benefits of utilizing material in lessons and should be interested, willing towards this area and develop a positive attitude towards it.

So it can be said that success of technology use in the educational settings largely depends on teachers attitudes toward technology use. In order to use technology in the classroom effectively, teachers’ attitude toward technology should be positive and they should be trained in using the modern technologies in the field of education.

The present study aims to investigate the teacher’s effectiveness in relation to media utilization and attitude towards use of ICT among primary school teachers of Gujarat state. The next chapter will discuss about the study which was already done in India and in foreign countries regarding to the teacher’s effectiveness in relation to media utilization and attitude towards use of ICT among primary school teachers.
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