
UNIT 11 TEACHING-LEARNING RESOURCES

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11.1 INTRODUCTION

Resource plays a vital role in the teaching-learning process. In education the meaning of resource is any device, object or machine used by a teacher to clarify or enliven a subject. It can also be viewed as material and equipment used in teaching learning process.

There are so many aspects of word “resource”. At some place, it is taken as a source of supply and support or aid that can be readily drawn upon. This word is also used as to refer to a capability or determination to persevere and in the context of classrooms, resources can be defined as physical demonstration aids, learners’ contextual understandings, teacher subject expertise, and structured organization of materials, ideas and activities.

You all are aware of the importance of resources for teaching and learning. So question has shifted from “*does* teaching-learning resources/technology enhance learning” to “*how* and in *what contexts* can teaching-learningresources/technology be used to enhance learning.” In this unit, we will discuss about these issues and

also about the contexts, in which various resources are going to be useful in teaching-learning process.

11.2 OBJECTIVES

After going through this Unit, you will be able to:

- describe the term “teaching-learning resource”;
- analyze the need of resources for teaching and learning process;
- categories various types of teaching-learning resources;
- explain the importance of learner-oriented environment as learning resource;
- delineate the role of classroom as resource;
- discuss the function of community as teaching-learning resource;
- describe importance of improvised resources;
- identify ICT and multimedia resources for teaching-learning; and
- select and integrate the appropriate resources in teaching and learning based on certain criteria.

11.3 TEACHING-LEARNING RESOURCES

In present era of changing world i.e. digital and techno savvy, the characteristic of learner is also changing. Around 12-15 years ago we could visualize that a learner was supposed to sit silently on his seat and tried to grasp what teacher was teaching. It is an old notion where we envision that learners should be in passive role and teachers have to play an active role in the classroom. According to present concept the learners should be in the active role and teachers must be in the role of facilitator. NCF-2005 also proposes that learning should be child oriented as well as activity oriented.

Learners, especially those belonging to adolescence age group do not understand the seriousness of education in their age; but it is they who readily want to participate in process of getting education. So, this is the responsibility of teachers to make their learners curious, eager to learn and also to be able to apply whatever they have learnt. To achieve this active environment and active learning is essential. The meaning of ‘active learning’ is such type of learning in which learners are engaged with the learning materials, full participation in the class, and work together to seek the knowledge. For this a teacher should create learning friendly environment for his learners. These things can be ensured by use of learning resources in the classroom.

11.3.1 Concept and Meaning

Teaching-learning resources are those resources what teachers use to assist learners to meet the expectations for learning defined by curriculum. We can also define these resources as materials used by a teacher to supplement classroom instruction or to stimulate the interest of learners. Obviously, teaching learning resources aid to retain more concepts permanently. Also, learners can learn better when they are motivated properly through different teaching learning

resources. Here are few definitions, which will help you to understand the concept of teaching-learning resources:

Teaching learning resources are tools that classroom teachers use to help their learners learn quickly and thoroughly. A teaching aid can be as simple as a chalkboard or as complex as a computer program.

Klaus (2010)

Teaching learning resources is a material which the teacher uses to facilitate the learning, understanding and acquisition of knowledge, concept, principles or skills by his learners.

Tamakloe, Amedahe and Atta (2005)

Teaching learning resources assists in and supports learner learning. It helps learners to understand and enjoy the lesson which the teacher teaches them. It helps learners understand the object of the lesson the teacher is conveying. Additionally, teaching learning resources helps the teacher to test whether the learners have improved their understanding of the subject.

Hayford (2013)

Gross *et al.* (1971) also emphasized on the need of these resources in the classroom. These learning resources are facilities, which are very important for effective learning because they stimulate learning and foster development at desirable changes in the behaviour of a learner. The basic purpose of teaching is to enable learning. The most effective teaching is that which results in the most effective learning.

Check Your Progress

- Note:** a) Write your answers in the space given below:
b) Compare your answers with those given at the end of the Unit.

1. Define Teaching-Learning Resources in your own words.

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11.3.2 Importance of Resources in Teaching-Learning

In the former discussion we discussed what teaching-learning resources are. We have also discussed that these resources also play a very significant role in teaching and learning and how these resources play a significant role in teaching and learning. It is a Chinese proverb that “What I hear, I forget; what I see, I remember and what I do, I understand”. In order to attain remembering and understanding the content, teaching- learning resources are needed. The importance of teaching-learning resources is as follows:

Teaching - Learning Process

- i. Forgetting is an integral part of our memory. We all have tendency to forget. For memorizing and retaining any concept appropriate use of teaching-learning resources are very effective.
- ii. Teaching-learning resources also motivate the individual. If teacher is using these resources to clear any concept then because of motivation learners can learn better.
- iii. In teaching-learning process, when a teacher uses these resources, learners use more than one sense organ. Uses of more sense organs make the learning permanent because these resources help to develop the proper mental image. Learners can learn any concept by using various senses like looking, hearing, touching, smelling and doing (schema).
- iv. Through teaching-learning resources, the teacher clarifies the content more easily.
- v. Teaching-learning resources make available direct experience to the learner which is helpful in learning.
- vi. Interest is related to motivation and motivation is essential for learning. The teaching-learning resources make the environment interesting for the learners.
- vii. In teaching; illustration with examples makes learning very successful. Teaching-learning resources provide absolute picture for conceptual thinking.
- viii. Teaching-learning resources are also helpful in increasing the vocabulary of the learners.
- ix. Teaching-learning resources also remove dullness from the classroom and make the classroom live and active.
- x. Teaching-learning resources are also helpful in time and money saving.

11.3.3 Types of Teaching-Learning Resources

To make the teaching-learning process effectual, so many resources are available. These resources are also known as teaching aids. We can categorize these resources in different ways as; traditional teaching-learning resources & modern teaching-learning resources or audio teaching-learning resources/aids, visual teaching-learning resources/aids & audio-visual teaching-learning resources/aids. The brief classification of these resources is as follows:

- a. **Audio Teaching-Learning Resources:** Those resources which involve the sense of hearing are known as audio teaching-learning resources as; radio, tape recorder, audio CD, gramophone etc.
- b. **Visual Teaching-Learning Resources:** Those resources which involve sense of vision are known as visual teaching-learning resources as; charts, pictures, models, real objects, flash-cards, maps, chalkboard, flannel board, bulletin board, overhead projector, slides etc.
- c. **Audio-Visual Teaching-Learning Resources:** Those resources which involve the sense of vision with sense of hearing are known as audio-visual resources as; television, film strips, film projector, audio-video CD etc.

Check Your Progress

Note: a) Write your answers in the space given below:

b) Compare your answers with those given at the end of the Unit.

2. What are major types of teaching learning resources?

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11.4 LEARNER AND THEIR ENVIRONMENT AS LEARNING RESOURCES

“I never teach my pupils; I only attempt to provide the conditions in which they can learn.” — Albert Einstein

That environment is known as learner-centered environment in which learners and teachers are learning from each-other. Learner-centered or learner oriented environment proposes a global shift away from instruction that is fundamentally teacher-centered, at times persuasively termed as ‘sage on the stage’ focusing instead on learning outcomes. Education in our middle schools and high schools these days is rapidly changing. The old notion of a classroom where the learners are sitting quietly and neatly in their seats, while the teacher is up front pouring pearls of wisdom and knowledge into their brains is absurd. Now the teachers are only facilitators and learners are primary operational, so if learners have to perform the key role in teaching-learning process, the environment of this process also should be learner oriented.

For making the classroom environment as resource for learning, schools must create learning environments that are as engaging and relevant as the ones that learners incline to outside of school. When learners will be more engaged with learning, automatically they will enjoy this process. It is also a fact that when learners are more engaged and more successful when they can connect to what they are learning, to situations they care about in their community and in the world, so teacher should try to give them chances to gain experiences from the community and real world. To make the environment learner oriented following steps can be pursued by the teachers:

- Feedback is related to reaction on learner’s performance of activities such as given responses by the learners during the class, creative activities, assignments, project work, discussion, etc. Here, the role of teacher is to provide more individualisation of feedback to deal with more qualitatively assessed learner activities to make classroom environment resourceful. It has been found in researches that feedback, given by the teacher makes environment as resource for the learners. McCombs(1997, 1999, 2000) has done extensive work on learner oriented teaching and learning process and she found that positive feedback between learner and teacher influence

Teaching - Learning Process

the learning and it gives encouraging climate for learning inside and outside of the classroom.

- Experiences gained during the time of learning are also helpful in making learning environment as resource. When learners get good experiences while learning, a constant positivity affects their understanding.
- Use of new technological tools in the classroom converts learning environment into a resource. These tools give opportunity to learners to be more creative.
- A teacher should know his learners. It makes class more alive. A brilliant way to know the learners to establish a good rapport with learners'. Teacher should know the name and background of each and every learner. If a teacher calls his learners by their name learners feel more attached to that teacher. Most learners enjoy this recognition and it empowers their engagement to learning.
- To make environment learner friendly, teaching style of teacher should be according to the learner. Teachers should try to keep their class interactive. To make the class learner oriented, teacher should provide the chance to the learners to teach their peer group. This also facilitates the learning process of the learners by making them aware of their responsibilities to attaining class objectives.
- To make the environment as resource the teaching content should be relevant. Learners should know clearly that why they are going to study any particular topic. The learning goals of the class need to be perceived as relevant to the learner's aspirations or experience. In some classes, this can mean the use of socially relevant topics or case studies extended to problem-based learning.
- Each learner is different in their own way. Some learners learn best by listening, some learners do well with lecture, class discussions, etc. Lecture is considered the least effective teaching method, although some learners learn best by simply listening. Some learners really increase their learning potential when they get opportunity to do something by themselves, they learn by doing. Therefore, teacher should try to use all these things in teaching and learning
- It is a proverb "***during the class when a teacher stands his learners sit, when a teacher sits his learners lie down and when a teacher lies down his learners are just like inactive beings***". Therefore not only learners but also a teacher should play a very active role in the classroom. Active teaching helps teacher to make environment resourceful. For this teacher can use soft skills as humour or storytelling. Also teacher should be like a role model for the class.
- To convert learning environment in resource, teachers are encouraged to share their passion regarding the subject and to feel free to get personal by offering their own examples. The use of eye contact, voice modulation, provocative questions and the long entrusted pause to wait for answers continue to be important methods for drawing learners into the learning process. In a large classroom, teacher can walk the passageways to further involve learners in the new learning mode.

- Provide situations that give learners an acceptable challenge. Activities those are slightly difficult for the child will be more motivating and provide for stronger feelings of success when accomplished.
- Give learners opportunities to evaluate their own accomplishments. Rather than stating that you think they have done a good job, ask them what they think of their work.
- To make the learning environment friendly for the learners, learner support is a critical component. Learner support describes about what a teacher should do to help his/her learners beyond the formal delivery of content or skills development. Learner support covers a wide range of functions and is a topic that will be dealt with more depth elsewhere.
- Most learners learn best when there is a logical sequence, delineated lesson that provides the objective and systematic steps to do the assignment. These type of learners benefit from the use of rubrics so that they can follow lectures and assignments in a better way.
- Do-it-yourself, peer-instruction exercise, debate, discussion, project-based learning, and learner-centred learning environments are some other software tools which convert environment into resource.
- Temperature of classroom also plays a key role in making classroom environment learner friendly. If the classroom atmosphere is too cold or hot, learners will have more of a hard time concentrating on what their learning task is. So the classroom temperature should be according to weather.
- Sitting arrangement for learners should be comfortable.
- The study area should be calm and quiet. The availability of light should be good with proper ventilation.
- Teachers should give break to learners on regular time interval.

A resourceful environment grows out of curricular decisions and in-class strategies which encourage learners' interaction with the content, with one another and the teacher, and with the learning process. It encourages learners' reflection, dialogue, and engagement, and requires a reliable assessment of their content mastery.

Check Your Progress

Note: a) Write your answers in the space given below:

b) Compare your answers with those given at the end of the Unit.

3. Mark these statements as true or false

In learner-centered environment, learners and teachers both learn with each-other. True/False

To make classroom environment as resource, schools must create learning environment full of activity and relevant. True/False

Feedback doesn't play any role to make classroom as resource. True/False

11.5 CLASSROOM AS A RESOURCE

“I’m a teacher and my classroom is filled with a range of learners with different needs and goals.”
Marietta

Anything what a teacher uses in classroom area to make teaching-learning more successful is known as classroom resource. The most efficient and effective part of this process is teacher who makes the environment more lively and learning oriented. A classroom is also a resource for teaching and learning and a teacher can use his classroom like a resource.

For a teacher dealing with learners in the classroom is a really very difficult task because all are different to each-other in some aspects. Therefore, for a teacher it is very important that s/he would include variety of learning resources during the teaching, because adoption capability and preferences of learners may be different.

To make his/her class learner friendly and convert it as a resource room, teacher has to carry extra effort and this depends on the competency of the teacher that how is s/he going to convert his/her traditional classroom into resourceful classroom.

Grubb (2008) has categorized classroom resources in four categories, which directly influence the achievement of learners and continuation of education. Application of these resources in the classroom converts traditional class in the resource room.

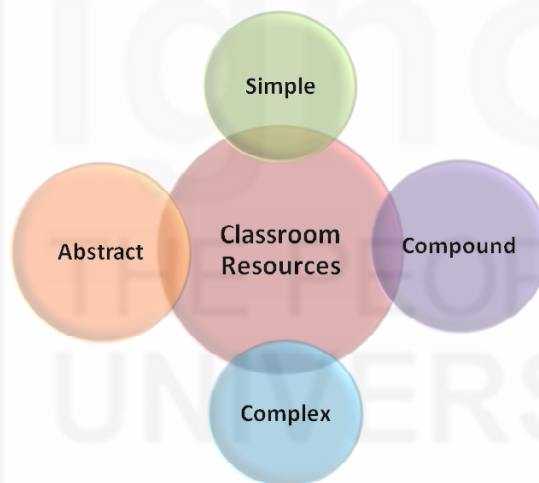


Figure 11.1: Classroom Resources (Grubb, 2008)

Simple Resources: These are the resources which are physical objects and can be directly bought, adjusted and measured for example- textbooks, blackboard, chalk and other technological things. Along with this in simple category other classroom factors for example- teacher and learner ratio, teacher experience and expertise, etc. are also included.

Compound Resources: Use of two or more than two resources which are jointly necessary for better outcome, are included in compound category as; class size reduction *and* adequate teacher preparation or use of technology and expertise of teacher on them etc.

Complex Resources: In this category Grubb (2008) has included those resources which are not easily bought, measured or adjusted for example- instructional approaches and teaching philosophies.

Abstract Resources: Those resources that are difficult to discern and measure, and often embedded in a web of relationships and practices within a specified

school as; collegial decision-making practices, internal teacher accountability, distributed leadership roles etc.

Developing Classroom as a Resource Room

To create the classroom as resource room a teacher should follow these steps:

- According to Judson (2006) when we establish any classroom innovation, it is the teacher who is the key determinant of implementation. If the teacher is not handling these resources and dealing with learners properly; all things are useless. Therefore for the classroom as resource of teaching-learning process a teacher should be knowledgeable and expert. With respect to educational technologies, teacher beliefs in self- efficacy and the school context can affect their implementation and use of technology (Judson, 2006).
- The traditional resource chalk and blackboard are the best materials to make a class resource room. If a teacher has expertise in use of blackboard, other resources are secondary. Although using blackboard is basic skill of teaching but so many teachers are not very skilled in use of blackboard. Teacher can use chalk and blackboard in variety of way as; writing of important points of content, for lower classes writing full answers, draw diagrams, flowcharts, tree-charts, figures, to solve mathematical problems by him/her and learners also, use of colour chalks for diagram and figures etc.
- Teaching technique of the teachers and attribute of teachers also influence the classroom and learning outcome of the learners. An expert teacher can handle the all complexity of the classroom and can convert a normal classroom into a resource, which is learner friendly but for this a teacher should has bundles of techniques and ability to apply these techniques appropriately.
- To make the classroom as resource a teacher can use various innovative learning and teaching methods, techniques and strategies as per the content and level of learners. For lower classes teacher should use schemes of work, phonics, different letters and sounds, spelling and story writing ideas.
- To make the classroom as resource instruction which is the main function of the class; should be on optimum level. The determinants of the good classroom instruction are the **relationships and interactions** between teachers, learners, materials, and their environment (see Figure 11.2).

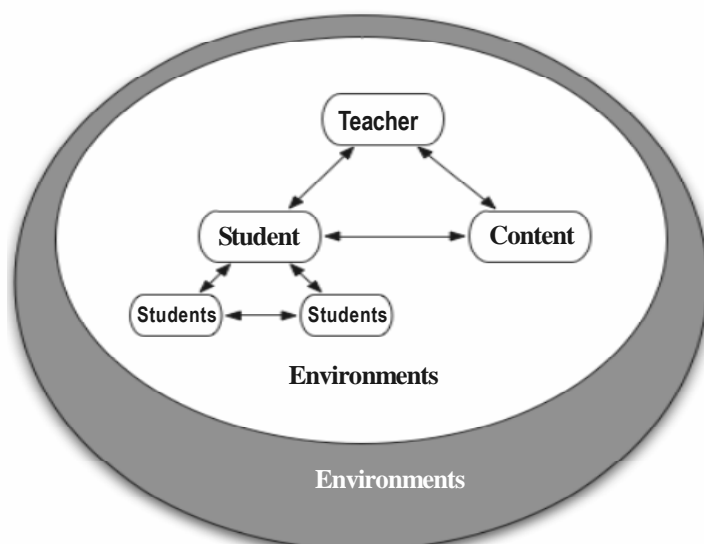


Figure 11.2: Instruction (Cohen, Raudenbush and Ball, 2002)

- **Layout of physical classroom** space also influence the environment of classroom. In their study Marx *et al.* (1999) found that the layout of physical classroom space influences the relationships among the learners, their peers, the teacher, and the content being taught. The seating arrangement of the class affects the interaction and interrelationship of teacher and learners and also between the learner and learner. The semicircle seating formation makes classroom more interactive and every learner take participation in the teaching-learning process. At the same time traditional rows and columns seating style, affect classroom interaction and relationship negatively. Those learners who sit in ‘T-zone’ or central and front areas get more attention from the teacher side and be more interactive with teachers. In other words, the physical arrangement of the space impacts classroom interactions and learner engagement with their teacher (Marx *et al.*, 1999, Rivlin& Weinstein, 1984).
- **Interaction among learner-learner will increase learning.** So the interaction should not be only between teacher and learners but sometimes teacher should enforce interaction among learners. For this s/he can give any brain storming topic to learners to express their perception and ideas. And during discussion teacher should play a role of facilitator.
- Smart Class is a solution designed to help teachers in meeting with new challenges and developing learners’ abilities and performance. The Smart Class is a system designed to bring the teacher and learners at different physical locations together in an interactive environment, using videoconferencing and live broadcasting techniques.
- With the development of technology Indian classrooms are being more technical. We can see smart boards in the classroom and these boards make class as a resource. These smart boards are interactive whiteboards that uses touch detection for user input in the same way as normal PC input devices as; scrolling and right mouse-click. A projector is used to display a computer’s video output onto the whiteboard, which then acts as a huge touch screen.

Other factors related to teacher like prepared lesson-plans, credentials of teacher, years of teaching experience, behaviour of teacher with learners, instructional quality, emotional climate of classroom make a classroom as resource. If a teacher is able to hold the attention of learners, amount of social interaction, amount of task involvement, and group glee make classroom more alive. Before using these materials in the classroom a close assessment of the resources is required. A teacher should ensure that the materials are able to satisfying those purposes for which the materials are being used.

Check Your Progress

Note: a) Write your answers in the space given below:
b) Compare your answers with those given at the end of the Unit.

4. Which style of seating arrangement of classroom makes class more interactive and alive?

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11.6 COMMUNITY AS A LEARNING RESOURCE

Community-based learning helps learners in building a sense of connection to their communities. After family society and community plays a very significant role for informal education. The role of community is very important for the child because it helps in shaping the behaviour of child. Community is a school in itself for history, literature, cultural heritage, and natural environments. Community or society can play also an important role in formal education.

Use of community as learning resource is also promoted as a way to develop stronger relationships between the school and community, while also increasing the community's investment in, understanding of and support for the school and the learning experiences it provides. Local businesses and community groups are traditional sources of after-school internships and summer jobs, but they can also be important sources of expertise in areas such as media, the arts, science, and technology. Community is not just an agency of informal education but it also works as learning resource for a learner. This resource is free and inexpensive. But sometime teachers ignore this resource due to various reasons/prejudices. It is also true that using community as resource is a very challenging task but a skilled teacher can do this.

We can utilize community as a learning resource in following manner:

Guidance Services: Community members can give guidance services to learners. Older members of community, expert of different area can help learners by their valuable guidance. In our schools we always ignore guidance part. Though as per guidelines of a professional person, guidance cell is essential in every educational institution but it is the ground reality that most of the schools are not fulfilling this norm. In such condition guidance service may be given by the community members.

Lecture of Guests: In the schools, experts of different area can be invited for delivering lectures and presentation. These guests may be expert of any area as social worker, mathematician, doctor, scientist, social scientist, sport person etc. As example- an educational institute may invite a sport person to give lecture on importance of sports and games in their daily life or a doctor to give a lecture to teenage learners on physical and emotional changes in adolescence. With the collaboration of a local organization or group an educational institution may provide additional learning experiences in the school premises such as; a scientific institution can help the school develop a robotics program or in making of low budget household equipments. Like this, learners are getting information within the school and community resources and authorities are being used to enhance the learning experiences of learners.

Community Participation: In this approach, learners would learn, at least in part, by actively participating in their community. For example, learners may undertake a research project on any local problem with NGO; participate in an internship program at a local level and can get some experience and recognition, write an article, or produce a documentary on particular topic. As such learners are learning within as well as outside of school premises, and such participatory community-based-learning experiences would be connected in some way to the school's academic program.

Citizen Action: Learners not only learn from and in their community, but they also apply what they are learning from this resource. Learners can influence,

change, or return to the community in some meaningful way. For example, learners may volunteer for a local NGO and can create a multimedia presentation, citizen-action campaign or short documentary intended to raise awareness in their community about any social event/cause. In this scenario, the audience and potential beneficiaries of a learner's learning products would extend beyond teachers, mentors and other learners to include community organizations and the general public.

Instructional Connections: In this form of community-based teaching and learning, a teacher makes clear and purposeful relationship between the content which has been taught in the classroom and local issues and contexts. For example, the workings of a democratic political system may be described in terms of a local political process. Also in this scenario, learners may be educated within the school campus, but community-related connections are being used to enhance learner understanding or engagement in the learning process.

Libraries: Public, private or community library may be used by the learners. In this condition those reading material which are not available in school library can be utilized by the learners in community or public library.

Nature Centres: Many of nature centres offer homeschooling classes and resources, as well as apprenticeship opportunities. Nature centres can be utilized as learning resource like this.

Museums & Historical Sites: Learners can visit a local museum for some content. Some museums also offer online resources and materials for curious learners. Learners also may be benefitted by this. For example a small group of learners experiments with an interactive museum exhibit. They talk about what they see and what they know, to relate it their classroom experience.

Any historical site represents a living history for the learners. These sites provide living history experiences and volunteer opportunities through a range of national, state and local resources, including historic palaces, homes, religious places, historical sculptures and battlefields.

Art Centres: Many community art centres offer classes for young ones, youth and adults in handicrafts, drawing, art history and visual and performing arts etc., and are often accommodate homeschooling groups also, which is beneficial for learners.

Volunteering: Through volunteering, community can play a significant role as a resource centre. Learners can learn so many things by volunteering in community celebrations. They can learn basic human values like, tolerance, fraternity, healthy competition, cooperation, sympathy, empathy, helping others etc. Learners can also participate in real world activities, skill and knowledge building.

Learners can also visit science centres, aquaria, botanical gardens and zoos and can use these things as resources.

Activity 1

Identify the resources from your community which you can use in your teaching subject. Use any one such resource and prepare a report based on learners' feedback.

11.7 IMPROVISED RESOURCES

Improvised resources are very important and every teacher should be equipped with this. Often, language teachers complain, what they can use in the classroom as resources. There is a very limited scope of using the resource in classroom teaching. In such condition they can use improvised resources during their class. Meaning of improvisation is the ability to take existing pieces and put them together in a new combination for a purpose.

Improvisation is an element of creativity and resourcefulness. In improvisation we use local resources in our immediate environment to build, construct, mould or make instructional teaching-learning materials that can assist in the smooth dissemination and transfer of knowledge from teachers to learners.

Tikon (2006) has defined it as “*an act of using alternative resources to facilitate instructions for teaching wherever there is lack or specific first-hand teaching aids.*”

In present scenario improvisation has become crucial in teaching-learning process because the economic situation makes the cost of facilities and equipment very high amidst decreasing or near lack of purchasing power. Improvisation reveals that there are possibilities of alternatives to teaching and learning aids. It should therefore meet specific teaching and learning situation.

Improvisation can be thought of as an “on the spot” or “off the cuff” spontaneous activity. The skills of improvisation can apply to many different abilities or forms of communication and expression across all artistic, scientific, physical, cognitive, academic and non-academic disciplines.

In order to effectively produce instructional materials from locally sourced materials, the teacher must have adequate skills which are basic. They also must include the knowledge of the basic principles and elements of design. An improviser is a resourceful, creative, and innovative both in thoughts and results.

11.7.1 Role of a Teacher

A teacher can use following skills and things as resource material in classroom:

- Different writing style (Pen lettering skill, Calligraphy, Free-hand writing)
- Lettering and Painting
- Use of different colours in graphics
- Modelling technique
- Blackboard and chalk
- Craft work
- Blank World & India map
- Textbooks (Course book and secondary books)
- Mathematical Tables/log book
- Cardboards
- Newspaper
- Cell phones

School teachers should make more effort for acquiring knowledge, expertise on various ways by which they can develop improvised resources where the readymade resources are not available.

A teacher can get expertise in preparing these resources by seminars, workshops and other training programs. Such type of programs should be attended by teachers on a regular time interval and they should also practice this acquired knowledge and should try to get mastery in that. For example a teacher can use plastic bottles as beakers and funnel or a used light bulb can be improvised for a round bottom flask

11.7.2 Advantages of Improved Resources

- Improved resources are cheaper to produce or buy because the raw materials are locally sourced.
- Very low cost improvised resources make teaching and learning process easier for the teacher and learners both.
- Improved resources motivate learners through the participatory activities during construction.
- Improved resources encourage class participation since majority of the raw materials can be sourced by the learners themselves.
- Improved resources also arouse the interests of the learners because they are made from raw materials they see daily in their immediate environment
- Improved resources can be used to teach large classes.

Check Your Progress

5. Mark these statements as yes or no:

- a) Lettering and painting also can be used as improvised resources. Yes/No
- b) Improved resources are very costly to produce or buy. Yes/No
- c) Improved resources can be used to teach large classes. Yes/No

11.8 ICT AND MULTIMEDIA AS LEARNING RESOURCES

Information Communication Technologies (ICTs) and various other means of multimedia are affecting our educational system and now these are becoming popular means for obtaining information. Use of ICT includes a creative multimedia component as a central part in teaching and learning According to **Primary School Curriculum, (1999, p.29)**, *“Technological skills are increasingly important for advancement in education, work, and leisure. The curriculum integrates ICT into the teaching and learning process and provides children with opportunities to use modern technology to enhance their learning in all subjects.”*

Visual and audio-visual materials make ideas concrete and provide the learners with specific models that help them acquire the intended attitudes and emotions which result in the development of new styles of reasoning and conduct. These new styles of reasoning open up possibilities for new exploration and activities by the learner (Andambi and Kariuki, 2013).

Using ICT in teaching and learning may be approached in three ways:

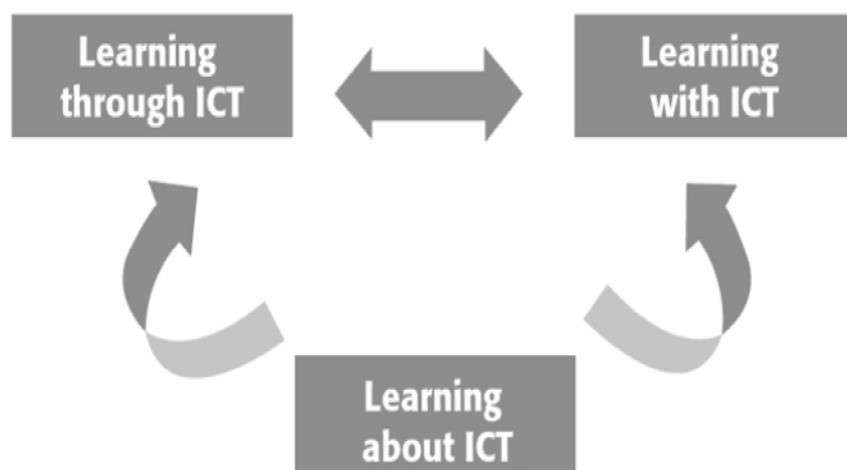


Figure 11.3: Use of ICT in Teaching and Learning

ICT is an electronic means which is used for capturing, processing, storing, communicating information. In teaching and learning we use ICT in three manners. First one is the use of ICT as an object of study; second is the use of ICT as aspect of discipline or profession and third is the use of ICT as medium for teaching and learning. As an object ICT refers to learning about ICT, which enables learners to use ICT in their daily life. As aspect of discipline or profession ICT refers to the development of ICT skills for professional or vocational purposes. As a medium ICT focuses on the use of it for the enhancement of the teaching and learning process.

ICT and multimedia tools can be divided in three categories: Input source, Output source and others. In input tools visualise/document camera, computers, tablet, application software can be included. In output sources projector, interactive whiteboard, monitor, TV can be included and in others we can include digital camera, switcher, digital recorder etc.

Keeping in the mind the key role of ICT and multimedia in the education UNESCO developed the *UNESCO Training Guide on ICT Multimedia Integration for Teaching and Learning* to help educators and trainers for teacher training workshop on the application of these resources so that teachers can use ICT in their classes, easily and effectively.

11.8.1 Advantages of Using ICT and Multimedia

In the classroom ICT is very much important by providing the opportunities to teachers and learners in operating, manipulating, storing, distributing and retrieving the information. Also ICT and multimedia are also very useful for open and distance learning. They promote learners towards independent and active learning. The most important feature of ICT is its flexibility. With the help of ICT and multimedia teachers and learners can learn after/outside school hours. There is a

growing body of evidence that use of ICT in the classroom can enhance learning (Meiers, 2009). Computer-based multimedia learning environments - consisting of images, text and sound - offer a potentially powerful setting for improving learner understanding. There is certainly no lack of vision within educational communities concerning the central role and importance of ICT in the educational contexts of the future (Wood, 1993).

- ICT tools can promote active learning by enabling the learner to find, manage, evaluate and use information retrieved from CD-ROMs and websites. Even learner can also discuss his/her result and share them with others using presentation and authoring software.
- By using digital cameras on field trips learners can capture images of events for project work and for active engagement in the wider environment.
- Content-rich software, that offers tutorials, simulations, and practice problems can be used effectively for the reinforcement or the revision of concepts.
- Multimedia tools enable children to record and chart their own learning progression
- The combined range of ICT tools enables the teacher to maintain a useful electronic anecdotal record of each learner.
- ICT extends the child's immediate learning environment, offering opportunities to push learning beyond the confines of the classroom.
- ICT such as e-mail and video-conferencing, offer children opportunities to exchange information about their own local environment with others. It also facilitates authentic learning by offering opportunities for children to experience the outside world within their own classroom.
- Internet may offer a suitable site for publishing learners' work on the school website, for viewing by parents and collaborating schools
- ICT offers the opportunities to learners to develop social skills through turn taking, sharing resources, and helping other children in combined project work. Combined classroom-based projects which use technology as e-mail, chat, video-conferencing etc. can be used by the learners to support each-other.
- ICT can support the learners' appropriation of new knowledge by offering him/her a range of tools related to knowledge representation like concept mapping software, presentation software and database software, which support learners in structuring their learning for later retrieval and application. Content-free software like databases, spreadsheets, and micro worlds offer children opportunities to interpret and manipulate data representations.
- Internet provides a number of authentic learning resources to teachers and learners. It helps learners in questioning, analyzing, to investigating and in thinking critically. Critical use of the Internet facility as an information resource is helpful in development of learners' capability to search for, manage, evaluate, use, apply and create information.

ICT and multimedia is not only beneficial for learners but also for teachers too. For teachers it makes the difference and can contribute significantly in these three components of the continuum:

- ICTs and properly developed multimedia materials can increase teachers' initial preparation by providing good training materials, facilitating simulations, capturing and analyzing practice teaching, bringing into the training institution world experience, familiarizing trainees with sources of materials and support, and training potential teachers in the use of technologies for teaching/learning.
- ICTs open a world of lifelong upgrading and professional development for teachers by providing courses at a distance, asynchronous learning, and training on demand. ICTs' advantages include ease of revision and introduction of new courses in response to emerging demands.
- ICTs break the professional isolation from which many teachers suffer. With ICTs, they can connect easily with headquarters, with colleagues and mentors, with universities and centres of expertise, and with sources of teaching materials.

11.8.2 Factors Affecting the Use of ICT and Multimedia

Although ICT and multimedia are very good resources for learning but most of schools and teachers are not using these tools to enhance the learning. These causes are as follows;

- Unavailability of infrastructural facilities
- Inadequate training or Lack of training
- Inadequate capital on the part of the individual
- Lack of time to spend on technology
- Cost of technology
- Negative perception of older people for multimedia and ICT
- Lack of power supply
- Lack of perceived economic or other benefits
- Lack of understanding of the value or possible benefits of multimedia facilities.
- Wrong choice of software or software inadequacy.

Check Your Progress

6. Fill in the blanks:

- a) ICT is an electronic means which is used for, processing,,communicating information.
- b) Computer-based multimedia learning environments - consisting of images, and

11.9 CRITERIA FOR SELECTING AND INTEGRATING RESOURCES IN TEACHING-LEARNING

The selection and integration of teaching-learning resources is a central part of the process of learning activity. Selection of these resources is as important as content selection is important. It is the duty of teachers to ensure that the teaching-

learning resources, what they are going to present in the classroom, are appropriate for the learners and these are going to positively affect the growth and development of the learners. All learners have their own unique characteristics. They come to school with their unique ability and way of learning. So as a teacher you have to be prepared and equipped to cater a vast array of individual needs of learners. Only the selection of these resources is not important but integration and use of these materials is as much important.

Before the selection and integration of teaching-learning resources teacher should ensure the objective of the curriculum/content and expected outcomes. As per objectives the learning resources should be selected. The certain criteria according to which the teaching-learning material should be selected are as follows:

- Teaching-learning resources should **directly focus on ideas** and essentials questions of the content/curriculum. Teacher should make it sure that the selected resources are presenting correct concept and picture of the curriculum.
- Now these days fostering creativity amongst the learners is lacking on part of teaching-learning process. The teaching-learning materials **should make the learners thoughtful, reflective** and it should build high level of skills among them.
- Resources should be **related to learners' knowledge and needs**.
- Teaching-learning resources should gear **as per the different abilities, requirement and area of the interest** of the learners. It should support the inclusive curriculum.
- These materials should **also incorporate outside experiences** in which family and society involvement must be reflected.
- **User friendliness** is also required. These resources should be well organized and teacher friendly, so teachers can use these materials and handle these materials very easily.
- Teaching-learning materials should encourage interdisciplinary connection. In this condition learners can correlate it with other subjects and in broader sense learners will be able to apply it not only in the class room condition but also in real world.
- If it is possible teaching-learning resources **should be related to all learning domains** of the learner (cognitive, affective and psychomotor). It should be also related to different levels of these domains.
- **Flexibility** is also an important characteristic of good teaching-learning resource. So during the selection procedure it is important that choice of resource by the teacher should be flexible.
- During the selection of teaching –learning material teachers should keep in mind the family background and living environment of the learners.
- According to demand of the time multimedia materials such as television, computer, games, internet, audio materials should be selected.
- These resources **must motivate the learners** and teachers to inspect their own attitudes and behaviour and to understand their responsibilities and rights.
- Resources should be **according to the age of the learners** for whom they are selected. If it will be as per their age it can directly affect their physical, cognitive, social, emotional and cultural development.

- Teaching-learning resources should be such that it can provide the way to find, present, use and evaluate the information and develop the critical capacities to make discerning choices.
- Teaching-learning materials should include valid and mixed assessments as; conventional and performance based.
- Physical quality of the resources should be good. Those resources which are in good condition, a teacher should select and use only those materials in learning activity.
- Teaching-learning resources should be grammatically correct. Language clearness is also one essential aspect of resources.
- Teaching-learning resources should not be offensive.
- The teaching material should not be controversial as related to race, religion, drug misuse, violence, crime, sexual activity, nudity, cruelty, suicide and objectionable phenomena

Integration means combination, so combining the selected resources according to learning activity is integration. In teaching-learning activity integration of resources is as important as selection is. The successful integration of resources in the teaching-learning process will depend on effective planning of teacher.

For the integration of resources these points are important:

- Teacher should do the lesson planning first and fix the place for certain resource. In the absence of planning, the resources can't be meaningful.
- Teacher should have expertise on the particular teaching-learning resources which s/he is going to use during teaching-learning activity.
- Teacher should remove the ambiguity from the resources.
- If teacher is using any online method as resource there should be filtration for few sites. Teacher should try to block access of inappropriate sites. Even s/he should also use such type of tools by which s/he can track individual usage.
- To make learners enactive in the classroom there should not be any boredom. So teacher should integrate/arrange resources in such manner that the class is not dull.
- Before using the particular resource if it is necessary the documenting, editing should be done by the teacher. Manipulation should be done by the teacher.
- Teacher is the best resource so if there is any lack of any resource, teacher should try to fill it by his/her efficiency.

Check Your Progress

Note: a) Write your answers in the space given below:

b) Compare your answers with those given at the end of the Unit.

7. Discuss any four criteria to select teaching and learning resource, which are most important according to you.

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11.10 LET US SUM UP

Unit explains the concept and meaning of learning resources as a tool to help a teacher in facilitating learning and developing a conducive learning environment. How learners' immediate environment is important for learning and how it can be used as a resource, it has been discussed in details. Unit suggests ways and means to develop and utilize classroom as a learning resource. Use of community members, community organizations and community events as resource is also appreciated in the unit as it brings learner and community to close to each other and facilitates learning. Teacher should try to develop and use improvised apparatus to support learning. Unit also highlighted use of ICT and multimedia resource in teaching-learning. Unit ends with the suggestions to teacher for selecting an appropriate resource and also to integrate it in teaching-learning process.

11.11 UNIT END EXERCISES

- 1) What are teaching-learning resources? Why these resources are important for learning?
- 2) How can you convert environment of your classroom into a resource for your learners?
- 3) Analyze the role of community as resource.
- 4) Define improvised resources? Explain advantages of improvised resources.
- 5) Discuss the advantages of ICT and multimedia as learning resource?
- 6) Describe the importance of role of teacher for integration of teaching-learning resources.

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11.13 ANSWERS TO CHECK YOUR PROGRESS

1. Teaching-learning resources are those resources what teachers use to assist learners to meet the expectations for learning defined by curriculum.
2. There are three major types of teaching learning resources:
 - (a) Audio teaching learning resources
 - (b) Visual teaching learning resources
 - (c) Audio-Visual teaching learning resources.
3. A. True B. True C. False
4. Answer based on your experience and perception.
5. A. Yes B. No C. Yes
6. Capturing, storing., Text and sound
7. Teaching-learning resources should directly focus on ideas and essentials questions of the content/curriculum (ii) These resources should be attractive (iii)As per demand of the time multimedia materials as television, computer, games, internet, audio materials should be selected(iv) Teaching-learning resources should not be offensive