UNIT 6 DIGITAL TEACHING LEARNING RESOURCES

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6.1 INTRODUCTION

With the widespread use of ICT, teachers are increasingly use modern digital resources that enable students to effectively engage in the learning process. As we know, apart from the new digital resources like blog, wiki, social networking sites, internet, e-book, e-conference, etc., traditional digital devices like radio, television are also used in teaching-learning process owing to their advantages in making learning contents available to wider population. Thus, both traditional and information and communication technologies (ICTs) based teaching-learning resources are in use in the educational process. In this unit, we will discuss the meaning of digital teaching –learning resources and the difference between traditional and new digital mediums. Also, the pedagogical utility and method of integrating various digital mediums in the teaching –learning process will be discussed.

6.2 OBJECTIVES

After going through this unit, you will be able to;

- describe digital teaching-learning resources;
- explain the uses of Internet in education;
• use web 2.0 tools in teaching learning sessions;
• explain use of e-books, advantages and disadvantages;
• organise e-conference;
• set up chat rooms; and
• practice m-learning applications in teaching –learning.

6.3 DIGITAL TEACHING LEARNING RESOURCES

6.3.1 Meaning of Digital Teaching-Learning Resources

In the Unit 5, we have described various non-digital teaching-learning resources. In this unit, we describe digital teaching-learning resources which can be used for teaching-learning purposes. Let us first understand what digital teaching-learning is? Any teaching-learning activity that uses digital tools to deliver instructions and facilitate leaning is termed as digital teaching-learning or digital learning. Thus, digital teaching-learning resources are any digital device or tool that helps teachers teach and learners learn. The digital device and tools that are used in the teaching-learning process include: e-books/digital books, computers, television, radios, iPods, tablet, camera, digital repositories, discussion forums, blogs, e-content, e-learning, m-learning, e-mail, chat, MOOCs, OERs, LMS, online learning, online teaching, podcast, simulations, second life, virtual reality, social networking services, webinar, teleconference, e-conference, radio interactive instruction, you-tube, wiki and WhatsApp, etc.

Digital teaching-learning resources are those teaching-learning resources that are digital in nature. You can use these devices as such or through accessing the Internet or by installing specific application software. The application software and tools includes Blog/M-blog, Concept Mapping, Digital Online repositories (NROER), Discussion Forum, E-Assessment/Online examinations, E-book, E-content, E-library, E-Mails, Instant Messaging/Chat, Interactive PPT, Interactive SLMs, LMS, Mashups, MOOCs, OERs, (FOSS), Online Learning, Online Library, Online Teaching, Podcast/Videocast, QR Code, RSS, Search Engines, Second life, Animations, Simulations, Social Networks, Tagging/Social Book Marking, Twitter/Instagram, Video Calling, Augmented Reality, Virtual Reality, Web1.0, Web2.0, Web3.0 tools, Webinar/Web conference/Teleconference/E-Conference, WhatsApp, Wi-Fi/Hotspots, Wiki, You Tube, etc.

A teacher can use digital teaching learning resources in his/her classroom. Let us understand through an example. Suppose the teacher intends to teach the concept of “different forms of mechanical energy” to his/her children. In such a case, he/she may provide some group activity to the children and let them identify the differences between kinetic and potential energy. After doing that, he/she may show children a YouTube video. For instance, the video available in the YouTube (Available at URL, https://www.youtube.com/watch?v=lqV5L66EP2E) can be used for the same. This video will help children to clearly understand the differences between kinetic and potential energy. In this example, the teacher uses a digital application for teaching a science concept. It is to be noted that, the use of digital device depends on the planning and creativity of the teacher. You may try other devices/tools during your teaching sessions.
Check Your Progress

Notes:

a) Write your answers in the space provided.

b) Compare your answers with the one given at the end of the unit.

1) What are digital teaching-learning resources? Give examples

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6.4 DIGITAL TEACHING-LEARNING RESOURCES FOR USE IN EDUCATION

After having understood the meaning of digital teaching-learning resources, let us discuss some digital teaching-learning resources which are used for educational purposes.

6.4.1 Radio and Television

With the emergence of technologies various electronic devices are being used to facilitate student learning in more meaningful and effective way. Among the available technologies, the most common and cheap media is the Radio. Radio broadcast started with analogue technology. It operated on analogue modes using frequency modulation. Analogue radios transmit natural voice. With the advent of digital technology, digital radios are now available. They operate in digital mode, which means they use a mathematic system represented by binary numbers 1 or 0 to transmit voice, which becomes digital. Radio is a mass media i.e. it can
reach messages to millions of people at the same time. When radio is used for the teaching-learning purpose, we call it educational radio. Educational programmes are broadcast through radio. Students can listen to such programmes staying in far off places. The communication through educational radio programmes is primarily one-way, which means the subject experts deliver the contents and students listen to them. Of late, there is two-way communication between the subject experts and the students. This is called the interactive radio instruction or interactive radio counselling (IRC). Today radio programmes are also available through the Internet. This form of webcasting radio programmes is called web radio. In the interactive radio instruction, students get opportunity to interact with the subject experts who deliver the contents, respond to their queries on the subject contents and other related aspects of the academic programme. We will discuss web radio in details later on under 6.4.4.

Let us discuss some of the uses of radio in education. The following are the three main uses of radio in the teaching-learning process.

i) Radio can be used to teach students directly from a centralised radio station through interactive radio technology. This provides students opportunity to interact with the experts and clear queries.

ii) Radio can be used as a support to regular teaching sessions by providing additional and supplementary lectures. For example, after teaching the concept of democracy, students may be asked to listen to radio programme on the topic ‘Democracy-Advantages and Disadvantages’

iii) Radio is used to provide general information about the various aspects of the educational programme/course and career opportunities. Counselling sessions in distance learning system can also be organised through radio.

One of the limitations of radio is that it broadcasts only sound and not visuals. Through television both visuals and sound are transmitted together. So, viewers get real feel of events. The educational programmes telecast through television are called educational television programmes. Like radio, earlier television broadcast was done through analogue mode. Now television broadcast is being done using digital mode. Like radio, television can also be used to transmit direct teaching lessons, supplementary teaching lessons and provide counselling classes. But the greatest advantage of television programmes is that students get real experiences by watching visuals presented through it. Both radio and television programmes can be prepared in different formats like direct talks, dialogues,
discussions, interviews, documentary, quizzes, docu-drama, drama, demonstration, and experiments.

Fig. 6.3: Educational Television programme
Source: http://rusembindia.com/home/embassynews  Source: http://hisplus.blogspot.in

Check Your Progress
Notes: a) Write your answers in the space provided.
     b) Compare your answers with the one given at the end of the unit.

2) How radio is used in teaching learning processes? Briefly explain
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6.4.2 Computer

Computer is one of the commonly used digital devices in teaching-learning process. Computer has a lot of applications in the field of education such as preparing digital documents, accessing Internet, communication between students and teachers, storing data, etc. Due to growing importance of computers in education, you should have basic knowledge about the various aspects of computers. Let us discuss them.

Meaning of Computer

First, let us understand what is a computer. Computer is an electronic device that accepts raw data from the user, processes these data under the control of a set of instruction (called programme), gives the result (output), and saves output for future use (storage). Thus, computer accepts data, processes it and gives result. These are the major operations/functions of computers. Computer has mainly four components; input devices, central processing unit (CPU), storage device
and output device. Input device, the piece of hardware component, is used to enter data/instructions to the computer. The piece of hardware component used to provide output data/convey information are called output device. The device that is used to store data is called storage device. The central processing unit (CPU) is the unit that performs most of the processing inside a computer. CPU consists of Control Unit (CU) and Arithmetic Logic Unit (ALU). The different types of computers include microcomputer, minicomputer, super computer and main frame computers. Various input devices, output devices, storage device and components of CPU are shown below.

![Fig. 6.4: Input Device, Storage Devices and Output Devices](http://www.computersprofessor.com; Source: http://www.aimgovtjob.com; Source: https://www.tes.com/)

![Fig. 6.5: Central Processing Unit](http://www.computersprofessor.com)

**Uses of Computers**

In education, computers can be used for various purposes such as preparing presentations, developing documents, storing student data, accessing internet, downloading teaching materials, using social networking sites, communicating with students, teaching online, attending e-conferences, and so on. In this subsection, let us limit our discussions to the use of computers for office applications. There are many office applications of which Microsoft Office (MS Office) is popular. You can use MS office to prepare texts, presentations, etc.

How will you access MS office? After switching on the computer, you may click the start button to access various softwares. To open the MS office application, click on the Microsoft office and then you can access all MS office applications.
Thereafter, click on the Word 2016 so that the Word application as you see in Fig. 6.7 will open. Then you can start typing in the large white space. This will help you to develop word/text files. After preparing word files, you may store it at any suitable location in the computer.

Similarly, to develop presentation, you may use Microsoft PowerPoint Presentation, an application software developed by Microsoft. When you open Microsoft PowerPoint Presentation, it looks like the one given below (Fig. 6.7). Thereafter, you may prepare slides in the white space (where Click to add title and click to add subtitle are shown). You can also add design and other effects to your presentation.
The two other commonly used application software’s are Microsoft Excel Worksheet (Fig. 6.8) and Microsoft Publisher Document (Fig. 6.9). You can use Microsoft Excel Worksheet is used to store and retrieve numerical data in a grid format i.e. columns and rows. Microsoft Publisher Document is used for developing brochures and notices. The open up window of these two applications are shown below:

Fig. 6.8: Microsoft Excel

Fig. 6.9: Microsoft Publisher Document

Check Your Progress

Notes: a) Write your answers in the space provided.
   b) Compare your answers with the one given at the end of the unit.

3) Briefly discuss the major components of computer
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4) Discuss the important uses of computer in teaching-learning process
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6.4.3 Internet

If you want to collect the latest information about a concept to be taught to your students, what do you do? The traditional approach is to refer to a book from the library. But today, Internet provides you the required information. Similarly, if you wish your children to attend any online classroom lecture, you need Internet. So, Internet has a lot of applications in the educational field. Before proceeding to discuss various uses of Internet, let us understand the meaning of Internet and its difference from the World Wide Web (WWW).

“Internet is a means of connecting a computer to any other computer anywhere in the world via dedicated routers and servers. When two computers are connected over the Internet, they can send and receive all kinds of information such as text, graphics, voice, video, and computer programs”. (www.businessdictionary.com/definition/internet.html). Thus, The Internet is a decentralized global network of computers. In other words, Internet is a network of the interlinked computer networking worldwide that is accessible to the general public. The interconnected computers transmit data thorough a special type of packet switching known as internet protocol or IP. While world wide web is a collection of documents that you can access using the Internet and web searching software. The web comprises the vast content available over the Internet. Thus, WWW is the collection of a large number of documents and these documents are called web pages. Thus, we can say, WWW is one of the services offered by Internet. Internet server is a special computer built up with selected high-quality components which can endure incessant work and high load and is connected to the Internet (http://www.iitk.ac.in). Websites located on computers called Internet servers. When you are connected to the Internet, your web browser software can communicate with the Internet servers, ask them to send your computer a copy of the web page that you look for. The Uniform Resource Locator (URL) you type or the hyperlink you click informs your computer about the server you intend to contact and the page you look for.

Fig. 6.10: Internet

Internet (Source: http://slideplayer.com/slide/4899750/)
What are the uses of Internet in education? The following are various uses of Internet in education.

- Internet helps to get updated information about various topics and current events.
- It helps to make communication fast and easy among students, teachers and peers.
- Internet helps to share and access various learning materials and subject contents.
- Internet helps to conduct online teaching and assessment.
- Internet helps teachers to supplement their lessons.
- Internet helps to organise interactive and collaborative teaching sessions.
- Internet provides unlimited amount of information in various formats like text, audio, video, etc.
- Internet helps to reduce cost of teaching-learning process.
- Internet helps to enhance skills of students.

Being a teacher trainee, you may like to know the uses of Internet in the teaching–learning process. Let us understand it with an example. Mr Naveen, a secondary school teacher intends to help his children understand the concept of ‘democracy’. To teach this concept, Naveen has developed the lesson plan based on 5E model in which he has asked his students to collect information about the forms of democracy existing in various countries belonging to Asian and European continents during the exploration stage. How can students collect such an information? One of the ways could be searching the Internet (the search procedure and results are shown in Fig. 6.11(a&b)). This could be practised during the classroom teaching-learning or may be provided as a home assignment. This simple example has given you an idea about the use of internet in teaching-learning.

![Fig. 6.11a: Searching the Internet](image)
![Fig. 6.11b: Searching the Internet](image)

### 6.4.4 Web Radio

Radio is a powerful means of communication and educational programmes broadcast through radio can reach any nook and corner of the country. Similarly, radio is a very cheap medium compared to other electronic devices. Therefore, it is extensively used in teaching learning process. There are two ways to broadcast educational programmes through radio i.e. the expert/teacher delivers educational content live or the pre-recorded lecture is broadcast. During the live session, students who listen to educational programme can interact and raise questions...
with the expert while in pre-recorded educational radio programmes students are passive listeners. But with the emergence of Internet, the means of broadcasting educational programmes through radio have changed. Nowadays, web radios are also used to deliver classroom lecture.

What is a web radio? **When radio programmes broadcast through Internet, it is called as web radio.** Normally, radio programmes are broadcast using satellites and the reach of the programme is limited to a particular geographical location, while web radio programmes can reach any part of the world. Web radio is similar to normal radio programmes but in web radio, the broadcast is through Internet. When normal radio programmes are simultaneously made available in the Internet, it is referred to as web radio programmes. In the web radio, student has the opportunity to interact with experts via microphone and also by texting message. These facilitates have made web radio more popular.

**Fig. 6.12: IGNOU gyandhara**

**Check Your Progress**

**Notes:**
a) Write your answers in the space provided.
   b) Compare your answers with the one given at the end of the unit.

5) What do you mean by Internet? Discuss the use of Internet in education

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6) How web radio programmes are different from normal radio programmes?

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6.4.5 Web 2.0

In traditional classrooms, teachers play an active role while delivering classroom instruction whereas students remain passive listeners. But in constructivist classroom, students engage in various learning activities and work collaboratively to construct knowledge themselves. Thus, students are knowledge creators than receivers as compared to the traditional classroom. Prior learning experiences help children construct knowledge. Now, learning experiences could also be provided by using latest web 2.0 technologies that allow children freedom to create, collaborate and share information. Through this process, they not only acquire new knowledge, but also, they create new knowledge.

Let us understand the generations of web technologies. The web 1.0 technologies include mainly read only materials, while web 2.0 technologies allow to create and share information through varied means. The latest web 3.0 technologies are live in nature where the individual get real experiences through virtual settings. The differences among these technologies are given in Fig 6.13. You may try to use these technologies in your teaching-learning sessions. In this section, we restrict our discussions to web 2.0 technologies. What do you mean by web 2.0 technologies? According to Devis (2010), “web 2.0 is a social philosophy that aims at abandoning the individual control over matters and gaining a greater number of participation”. It provides learner freedom to actively engage in learning activities. Miller (2010) defines, “the web 2.0 as an equal regrouping of the evolution and revolution which benefitted from existing standards such as HTML, CSS and XML and the Web browser”. According to Richard Mac Manus, “Web 2.0 is a social and open; it leaves the control of data and combines the global with the local. It corresponds to new manners to search and access to content. It is ready platform for educators, media, politics, and communities and for everyone else”. Thus, web 2.0 technologies help users to create contents, and publish and share them with other users. Web 2.0 technologies also operate through various social networking. The web 2.0 technologies include blogs, wikis and social media, social bookmarking, podcast/vodcast, RSS feeds and tagging. Let us briefly discuss some of these technologies/tools and their uses in teaching–learning.
Blogs

Blogs are personal websites where contents are organised like a diary or a journal. The contents posted in blogs appear date wise in chronological order and the public can get access to these contents. Teachers can create learning contents and post them in blogs for the access of students. The materials that are posted can be either text, audio, video or multimedia. Similarly, students can also create blogs to post their creations such as literary works, assignments, project reports, and so on. Let us know how to create blogs and how to access the blogs available in the Internet. To access the blogs, you may use the option of general search through any Internet browsers. Or else if you know the exact blog address, the same can be typed in the search bar of Internet browsers to access it. Thereafter, the materials available in the blog can be integrated in your teaching-learning sessions. To create blog, you may use any application software designed for create blog. Blogger.com is one of the application software you can use for creating blog. You need to sign in to the website to create blog. After creating your blogs, you can start posting materials in the blogs so that your students are able to access them.

Wikis

Wikis are open dynamic websites where collaborative constructed knowledge is available for the use of public. Wikis are webpages that carry information on varied topics. You may use those materials in your teaching-learning sessions. One of the common wiki is the Wikipedia. In Wikipedia, you can search for any topic that you want. Similarly, you can also edit contents available in the Wikipedia. Similarly, you may also direct your students to update contents on Wikipedia which help them develop skill of writing and enhancing subject knowledge. How do you edit contents in Wikipedia? Create an account in Wikipedia and use the edit option to edit contents that are available.
Social media

Social media are one of the most influential learning tools of the twenty-first century. They help individuals maintain social relationships through social networks. Social media serve as a platform to create social networks or social relations among people who, for example, share interests, activities, backgrounds, or real-life connections. Some of the most popular social media websites are Facebook, LinkedIn, Twitter, and MySpace, etc. Social networks help in teaching-learning process in a variety of ways. As a teacher, you can create student groups of your class in social media sites through which educational contents can be made available to them. This helps you interact with your students using tools available for chatting. How will you create groups in social media sites? For example, in Facebook, you may login and click on the link ‘Create’ (shown below in Fig. 6.15a). Then a new window opens (Fig. 6.15b) where you can type the group name and personalize the privacy setting of the group.

Fig. 6.14: Homepage of Wikipedia

Fig. 6.15a: Creating Groups in Social Media

Fig. 6.15b: Creating Groups in Social Media
Podcast and videocast

Now let us discuss about podcast and videocast. The short digital audio and video files containing meaningful learning contents are termed as podcast and videocast respectively. The process of creating and distributing such materials are known as podcasting/videocasting. You can use any digital tool (mobile, computer, etc) or any application software (free or paid) to develop podcast/videocast. Thereafter, the same may be posted in the Internet for use by students.

Rich Site Summary (RSS)

Another web 2.0 tool is RSS feeds. Rich Site Summary (RSS) is a tool to provide updated information of website entries. In order to use RSS feeds, you have to use any RSS feeder. In the RSS feeder the website address may be stored and whenever any new entry is made, the message about that particular website is shown on the RSS feeder. This helps teachers and students get updated knowledge about their subjects, and information about various courses, etc.

Social book marking

Social book marking helps individuals to book mark documents of different formats available in the web. Bookmarking helps students and teachers to access materials at a later time. Teachers bookmark materials for the use by students and they share the materials among them.

6.4.6 E-book

Meaning of E-book

Textbooks are the most common learning resource used by students. For enhancing subject knowledge students also use reference books. Both textbooks and reference books are available in printed form and follow a specific style of aligning contents. But with the emergence of technology, books are now prepared electronically. E-books are electronic version of printed books. JISC defines e-books as “an online version of printed books, accessed via the Internet”. The electronic version of the whole book is generally treated as e-book. It is downloaded to a computer, PC, Mac, laptop, PDA or any other kind of computer, and is read on the screen. E-book can exist in different formats (i.e., PDF, EXE-compiled HTML pages, PDA, etc.). Similar to printed books, e-books also contain table of contents, page numbers, pictures, graphics, illustrations, hyperlinks and other attachments. Even video and animations can also be embedded in e-books.

How are e-books developed? You may use any application software used for developing texts/documents. For example, open office, word document software developed by Microsoft or Adobe Page Maker can be used. Once you have inserted the text, the same may be saved. Now the saved file is an e-book. Thereafter, e-book can be uploaded in the Internet. Even e-books can be accessed from the stored location and you can read them off-line. To read e-books, computer and reading devices/software (e-book reader) is essential. Some of the reading devices (e-book reader) are Kindle, Kindle DX, Sony Daily Readers and Nook, Nook Color, KOBO, Astak EZ Reader. Thus, the process is simple; search the e-book and read it using an e-book reader.
Advantages and Disadvantages of E-books

The following are the advantages of e-books:

- The contents of the e-books can be updated any time. The costs involved in updating is less as compared to printed books.
- E-books contain texts, audio, videos, animations, etc. Even e-books are interactive in nature.
- E-books are easy to purchase and can also be downloaded from the Internet and do not involve packing and shipping costs as in the case of printed books.
- E-books are instantaneously delivered and can be purchased any time. E-books are universally accessible.
- The storage space of e-books is very less as compared to printed books. E-books are easy to prepare and do not require papers.
- E-books are portable. They can be carried in laptops, mobiles, iPods, CDs, etc.
- The information in e-books are easily searchable. The pages can be easily located by typing the requisite page number.
- Many e-books can be carried to wherever you go.
- E-books are very easy to sell and distribute.
- E-books are easy to use. The font size, colour of texts and background can be changed as per the preference of the reader.
- The reader can bookmark and highlight important points in e-books.
- E-books are never out of stock.

The following are the disadvantages of e-books:

- E-books are not convenient to read. Reading e-books using digital device develops health problems.
- Printed books come with properly bounded form. But if you wish to print e-books, printing costs are involved and may not be properly bound.
- E-books can be downloaded, printed and distributed abundantly and this creates the problem of piracy.
Check Your Progress

Notes:  

a) Write your answers in the space provided.

b) Compare your answers with the one given at the end of the unit.

7) What is a blog? How blogs are created?

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8) How will use social media for teaching-learning?

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9) Describe the advantages of e-book.

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6.4.7 Chat Rooms

The communication between teacher and students in the classrooms is mostly verbal in nature. But in the technological era, different tools and application software help students and teachers communicate between themselves in multiple ways. Teachers and students use telephone or mobile to interact verbally (voice message). Apart from verbal communication, sending message in text format (text message) is also possible. It started with the telegraphic communication. Thereafter, e-mail was used to send text messages. Through e-mails, people can also attach audio, video and other files of different formats along with text messages. At present, there are different digital devices through which one can send text messages using the application software. Most of the social networking sites provide these facilities. Thus, the process of sending voice messages and text messages is called chatting. Chatting can be used effectively in the teaching-learning process. Let us know more about chatting.

Chat refers to formal or informal form of conversation with one or more people through the Internet. Chat is the process of communicating, interacting
or exchanging messages over the Internet with one or more people. Chat is form of communication over the Internet that offers a real-time transmission of messages from the sender to the receiver. When messages are typed during chat, it reaches the receiver’s monitor instantly. Thus, we also call chat as instant messaging. Chat is also known as chatting, online chat or Internet chat. Usually messages (Short Message Service, SMS) are delivered through chat. But today, verbal, audio, video, audio & video, and emotions are also sent during chatting. Chat can be both synchronous and asynchronous. Chat enabled service or software that supports chat are required to organise a chat. After enabling the chat software, individual starts chatting by signing in. Individuals can also participate in group chat for which chat rooms are required. Let us discuss about chat rooms.

**Chat rooms are virtual rooms that are used to chat individually or in groups via the Internet.** Chat room is a website, part of a website or part of an online service that allows individual or communities of common interest to communicate in real time. Generally, one to one chat or one to many chat (group chat) is conducted in chat rooms. As discussed above, generally text messages are sent through chat rooms. But today, people also sent files of different formats like audio, video, etc. through chat rooms. Even, individual can see each other in chat room for which cameras need to be installed in the chatting device. Chat room users can register to any chat room of their choice by logging in using user name and password. After logging in, they can see the list of people who are online and decide the individual they want to send messages to and to receive messages from.

What is the relevance of chat room in teaching-learning? How do we set up your chat rooms? Which are the common chat service providers? Let us answer to these questions. There are many chat service providers. They make chat options available along with other services. For example, Google, Facebook, Yahoo, Skype etc. provide the facility to chat. To start a chat or chat room, you need to create an account first. Thereafter, for individual chat the inbuilt chat software can be used. The same is followed to develop chat rooms. But in chat rooms you can add participants. In the context of teaching-learning, you may create a chat room and add your students to the list of participants. Then the students are able to chat with you as and when they wish.

### 6.4.8 E-Conference

Traditionally, conference means gathering of individuals to discuss matters of common interest face to face. In such conference people are invited to specific location and meetings are conducted. Digital technology has changed the way of organising conference. Now there is no need to travel to any specific location,
instead you may use the Internet connected digital devices to organise the conference. Such conference organised in a virtual environment is called e-conference. E-conference refers to electronic conference. So, any conference conducted through electronic medium is termed as e-conference. In e-conference, people are present to discuss matters of their interest in a virtual space. So, any one located at any place of the world can attend the conference through the Internet connected electronic devices such as computer, mobile, iPad, etc. In e-conference, People can see each other through video call facility; share files, attachments, audio and video files; make presentations; discuss among themselves, etc. E-conference is also known as e-meeting, web conference, web seminar, webinar, etc.

How is e-conference organised? Application software are needed for organising the e-conference. There are plenty of software’s (both free and commercial) through which you can conduct an e-conference. You need to download them for organising e-conference. Some of the software are given below in Box 1 and Box 2. After selecting the software, you need to sign in for using it. For example, let us discuss the method of using a free software “drum” for conducting e-conference. You may search the URL “https://thisisdrum.com/” to access Drum (Or else you may use key word “Drum” in any search engine). Once the website is opened, the home page opens. First, you have to create an account, and then in the home page you see a link on the right top corner to sign in. Click it and start organising the e-conference sessions. But keep in mind that you are ready with the plan to organise a conference like selection of theme of the conference, time, schedule of conference, list of participants, award of certificates, etc.

<table>
<thead>
<tr>
<th>Box 1</th>
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<tr>
<td><strong>Free Applications:</strong> Amazon Chime, Any Desk, Anyplace Control, Appear.in, Big Blue Button, Blab, Drum, JoinME, Learn Cube, Manage Meet, Mikogo, Share Anywhere, Uberconference, WebEx, Yugma, Zoom</td>
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<tbody>
<tr>
<td><strong>Commercial Applications:</strong> Adobe Connect, Any Meeting, Big Marker, Blackboard Collaborate, Click Meeting, Demio, eBVLD, Gather Place, Google Hangouts, GoToMeeting, Mega Meet, Mighty Meeting, OmniJoin, Presenter Net, Screen Connect, Vison Pro, Vitero</td>
</tr>
</tbody>
</table>
6.4.9 Search Engine

One of the most prominent features of the Internet is to make information available to the doorsteps of the users. Suppose, anyone wants to collect the details about ‘the Parliament of India’ from the Internet, how does he/she do it? The key word ‘the Parliament of India’ has to be fed into the Internet. The keywords are entered to the search engine. **Thus search engine is a software programme or script available through the Internet that searches documents and files for keywords and returns the results of any files containing those keywords.** Or else the search engine is a computer programme that searches data bases and the Internet for the documents containing key words specified by the user. In short, we may say that, search engine is the software that is used for searching information on the world wide web. There are a number of search engines available on the Internet. Some of the most popular search engines are Google, Bing, Yahoo, Ask.com, AOL.com, Baidu, Wolframalpha, DuckDuckGo, Internet Archive, ChaCha.com, Dogpile Search, Yippy Search and Webopedia, etc.

How do you access search engines? It is through browsers. Browser is a software application that allows people to access, retrieve and view information on the Internet. So, in order to fetch the information from the Internet, browsers are used. The information that is browsed can be a website, image, audio, video files or any other files. We can also say browsers are tools to browse the Internet. The most popular browsers are Google Chrome, Mozilla Firefox, Internet Explorer, Opera and Safari. Thus, using browser, you can access search engines. Then in the search engines, key words are typed to retrieve the required information. Thus, search engines are software programmes that search for websites based on the keywords typed in. Or else search engines are used to search for information on the Internet. So, browsers are used to browse the Internet while search engines are used to search for information on the Internet.
When key words are typed and searched, the search engines search the database and sorts pages that match the keyword out of the million pages and produces the results in ranked order according to the relevance of the information searched for. Let us understand the steps of searching the information on the Internet through an example. In order to retrieve information about the Parliament of India, we have to first choose any browser. For example, we choose Google Chrome. So, open the Google Chrome browser, and then select any search engine. Here we may use the Google search engine. So, to access Google search engine, type www.google.com in the browser and enter it. Then the Google search engine is activated. Then in the search bar type the Parliament of India, and enter it. Then the results are produced. The steps of searching are shown in Fig. 6.18a and b.

Let us discuss the use of search engines in teaching-learning process. As we have discussed earlier, search engine helps teacher retrieve whatever information he/she wants. For example, a teacher teaching language wants podcast on teaching vocabulary, he/she may search the Internet and find a suitable one. The same can be used to teach his/her students. Similarly, a science teacher, who wishes to show a video related to nuclear fusion to his/her students, can use search engines to find an appropriate video and can show the same to his/her students. If a teacher wishes to update his/her knowledge on any specific content that he/she teaches, he/she can use search engine to explore the latest information on that particular
topic/content. Also search engines can be used to locate various audio/video files, PDF files, and other relevant websites. Thus, search engines are of great help to teachers in a variety of ways.

Check Your Progress

Notes: a) Write your answers in the space provided.
   b) Compare your answers with the one given at the end of the unit.

10) What do you mean by e-conference? How is e-conference organised?
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11) Briefly discuss search engines and browsers. List a few examples for both.
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6.5 MOBILE

6.5.1 Meaning of Mobile

Mobile phone or simply mobile is a wireless hand-held device that allows users to make calls, capture photos, send messages, etc. Mobile phone connects to wireless network through radio waves or satellite transmissions. The earlier form of mobile phone was very heavy and used only for making calls. These mobile phones were called cellular phone or cell phone. Now, advanced cell phones are available. Today cell phone is used to send messages both text and multimedia, make video calls, access the Internet, etc. The mobile phones with advanced features are called smart phones.

As discussed, mobiles are common digital devices used for communication specially making calls. But apart from communication, mobiles are also used for various other purposes such as audio/video recording, capturing photos through camera, multimedia messaging, playing games, document viewing, accessing the Internet, making bank transactions, online trading, online booking, paying bills, communication via social media, storing files and so on. The use of mobile phones in education is also increasing day by day. When mobile device is used for teaching-learning, it is called mobile learning or m-leaning. By m-learning one means the use of mobile phones for teaching-learning, but the use of any hand-held devices can also be termed as m-learning. The hand-held devices
Teaching-Learning Resources

include tablet, smart phones, laptops, notebooks, digital reader, MP3 player, etc. Thus, any kind of teaching-learning activity that takes place via a portable hand held electronic device is known as m-learning.

The key characteristics of m-learning is the unlimited access to learning materials and contents over mobile devices. Thus, students can use, study and learn those materials at any place and any time as per their choice. The importance of m-learning is increasing owing to the easy access to mobile devices. Also, the mobile devices are small, handy and less costly as compared to other digital electronic devices. Students can also work collaboratively, share materials and access information.

6.5.2 Use of Mobiles in Education

Mobiles can be used in variety of ways in your teaching-learning process. Let us discuss some of the major uses of mobiles in education.

- **Access to Teaching-learning Resources:** One of the major uses of mobile is the access to educational contents. Both teachers and students can search for relevant educational contents in an Internet connected mobile. The content/file can be downloaded and read offline. For example, you may visit NCERT website to download textbook materials and store them in your mobile. Similarly, you may visit any website and retrieve information that you search for. Educational video, audio, etc. can also be watched through mobile. So, you may use mobile to access any educational content.

- **Use of Mobile Apps:** There are many mobile applications (mob apps) related to education. These mobile apps are either free or paid and accessed via a mobile device. Some free mob apps are given below. You may use such apps to teach your children and develop your own professional knowledge.

![Fig 6.19: Mobile Apps](image-url)
Mobile Apps

- **Interactivity and communication:** Classroom communication between teacher and students is confined to the four walls of classrooms, but mobile technology has expanded the scope of communication among the various stakeholders of education. Teacher and students can communicate, share, exchange information and learning materials beyond classroom timings. For that, various social media apps need to be used. Similarly, those apps can also be used for communication among parents. For this, you need to use chat apps or create social media groups. The most popular social media are WhatsApp, Facebook, Twitter, etc.

**Check Your Progress**

**Notes:**

a) Write your answers in the space provided.

b) Compare your answers with the one given at the end of the unit.

12) Discuss the use of mobiles in education?

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**6.6 LET US SUM UP**

The teaching learning process in the twenty first century is dynamic in utilizing different digital teaching learning resources/tools. Today, digital mediums like radio, television, computer, mobiles, iPod, camera, web 2.0 technologies, and other application software are used for educational purposes. Owing to the growing importance of the digital mediums in teaching learning process, this unit has discussed various digital mediums. Uses of Internet, the alternative style of using radio i.e. web radio, various web 2.0 technologies like blogs, wiki, etc. are also discussed. In addition to that, the concept of e-books, ways of organising e-conferences, difference among search engines and browsers with its application in educational settings are also discussed. The Unit ends with discussion about mobile and its uses in education.

**6.7 SUGGESTED READINGS AND REFERENCES**


Teaching-Learning Resources


**Websites**

https://www.youtube.com/watch?v=IqV5L66EP2E

http://www.ccrane.com

http://showoffclub.com

http://www.ormondbeachcomputerrepair.com

http://www.ccrane.com

http://showoffclub.com

http://www.ormondbeachcomputerrepair.com

http://nohadraradio.com/

http://www.educationinnovations.org

http://rusembindia.com/home/embassynews

http://hisplus.blogspot.in

http://www.computersprofessor.com

http://www.aimgovtjob.com/

https://www.tes.com/

http://slideplayer.com/slide/4899750/

https://www.google.co.in

http://www.ignou.ac.in/

https://www.blogger.com/

https://www.wikipedia.org/

http://www.ncert.nic.in/index.html

https://aliden182blog.wordpress.com/

https://thisisdrum.com/

https://in.yahoo.com/

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6.8 **ANSWERS TO CHECK YOUR PROGRESS**

1) Teaching – learning environment that employs digital tools to deliver instructions and facilitate learning is termed as digital teaching-learning or digital learning. Digital learning refers to both teaching and learning utilizing digital resources. **Thus, digital teaching-learning resources are any digital device or tool that helps teachers teach and learners learn.** The digital device and tools that are used in the teaching-learning process include: e-books/digital books, computers, television, radios, iPods, tablet, camera, digital repositories, discussion forums, etc. For example, use of computers, softwares like presentation software, mobile apps, etc for teaching and learning are considered digital teaching-learning.
2) Radio is used to deliver educational programmes (lectures), supplementary learning materials and general information about the courses.

3) The major components of a computer are input devices, central processing unit, storage devices and output devices.

4) Computers can be used for preparing presentations, developing documents, storing student data, accessing the Internet to download teaching materials, using social networking sites to communicate with students, online teaching, attending e-conferences, etc.

5) Internet is the interlinking of computers worldwide. Refer to section 6.4.1 for additional details.

6) Web radio educational programmes are transmitted using internet (web) while normal educational radio programmes use satellites for transmission.

7) Blogs are personal websites used for storing digital contents/materials like that of a diary. To develop blogs, application softwares/websites (for example, www.blogger.com) are used.

8) Social media help communication via the Internet. In most social media sites, ‘groups’ of similar interest can be created. For example, those having interest in science education can create group and post resources/materials related to science teaching like lesson plans, video clips, podcasts, audio files, etc.

9) Refer to section 6.4.6

10) Conferences conducted in a virtual environment (internet/web) using electronic devices are called e-conference. Application softwares (both paid and free) are used for organising e-conferences.

11) Refer 6.4.9

12) For accessing and disseminating educational resources, use of mobile apps and using mobile for sharing information.