
UNIT 16 ICT: SOCIAL, LEGAL AND ETHICAL ISSUES

Structure

- 16.0 Introduction
- 16.1 Objectives
- 16.2 ICT and Social Issues
 - 16.2.1 Cyber Space and Social Issues
 - 16.2.2 ICT Phobia as a Social Problem
- 16.3 Fair Use of Learning Resources
 - 16.3.1 ICT Policy
 - 16.3.2 Internet Filtering
 - 16.3.3 Managing Intellectual Property
 - 16.3.4 Copyright in the Digital World
 - 16.3.5 Plagiarism
 - 16.3.6 Open Source and Open Content
 - 16.3.7 Privacy Policy
- 16.4 Technology Resources for Affirming Diversity
- 16.5 Technology for Equitable Access to Resources
- 16.6 Impact of ICT on Socio-Cultural Issues
 - 16.6.1 ICT and Child Development
 - 16.6.2 Cyberbullying
 - 16.6.3 Addiction, Anxiety and Stress Creation Using Technologies
- 16.7 Let Us Sum Up
- 16.8 Suggested Readings and References
- 16.9 Answers to Check Your Progress

16.0 INTRODUCTION

In the previous units, you may have learnt about the use of ICT in various contexts such as classroom teaching, learning, interaction among teachers and students, online assessment, learning support services, etc. In this unit, you will learn about the social, legal and ethical issues pertaining to ICT. ICT facilitates use of information available on the Internet. But one should be cautious about the legal aspects such as copyright and intellectual property right. Apart from the use of ICT in education, social media technologies have embedded in our daily life. Technologies like, multiple televisions, laptops, Mp3 players, mobile phones, tablets, game consoles have become part of life of young people nowadays. Social media have created new projections for social interaction and access to information. Due to the rapid growth of Internet, social media and Apps, one should be very careful of the cyberbullying, Internet addiction and other technologies causing anxiety, stress and deviant behavior, etc. You will learn about all these aspects in this Unit.

16.1 OBJECTIVES

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

- describe ICT and social issues in today's life;
- explain the ethical issues on use of learning resources available in the online environment;
- discuss the plagiarism and copyright rules and regulations in the digital world;
- discuss the open source, open content and its licensing; and
- discuss the impact of technologies on social culture, problems of cyber bullying and Internet addiction

16.2 ICT AND SOCIAL ISSUES

Access to the ICT has become common in our social life. Mobile services are considered as essential for the society. Internet is an important resource for information about career, education, entertainment, etc. ICT has deeply impacted social life. ICT also plays a key role in the education sector for teaching and learning. With the faster growth of technology, different types of communication modes have emerged such as interactive communications like email, Facebook, twitter, etc. However, the 'digital divide' remains and has grown to unethical limits.

16.2.1 Cyberspace and Social Issues

People in a community live together and interact with each other in a common space. Cyberspace may be treated as a conduit touching portion of real space at key points. Here, ideas are passed through the conduit, and business is transacted through this conduit i.e. cyberspace.

Cyberspace communities are members of the global community interacting in a different space than in real space. These members rarely interact in the real space, but they communicate through multimedia means in cyberspace through text, image, sound, or a combination of the three. It is not possible to use the Internet without being a part of this community of people. In fact, one cannot avoid being a part of this community. All the time one uses the Internet as a conduit- by e-mailing people, reading web pages, reading newsgroups, or doing commerce online. This means that one has joined the cyberspace community.

The use of the Internet for both casual and secure applications has soared, with double-digit growth rates measured month-to-month rather than year-to-year. While sophisticated Internet users recognise the need for a digital identity mechanism, many people using Internet applications remain confused to existing levels of security and identification.

16.2.2 ICT Phobia as a Social Problem

ICT phobia is a type of fear in use of any technology or complicated devices, particularly computers, tablets, mobile, etc. Although there are many explanations of ICT phobia, they become more difficult as technologies are growing rapidly.

ICT phobia is often used in the sense of an unreasonable anxiety. ICT phobia is related with the anxiety about learning with computers or not being able to learn effectively using computers. This is basically to avoid fear of learning new skills mandatory for use of computers in the school or workplace. ICT phobia has affected many people around the world. Many teachers refuse to use technological aids for teaching their students just because of fear of technology.

As the use of technology has increased in day- to- day life, one need to use the new technology. As you know that our grandparents nowadays are using mobile phones for interaction with family members and friends. Writing letters to relatives has also reduced similarly. Official communications are sent through e-mails. If people are not ready to accept the change or be afraid of using new technologies, they become isolated in the work place and even in the society.

Skill development is the best way to overcome the fear of technology. Persons suffering from this phobia must be willing to share their difficulties to overcome their phobia. They can get training to acquire skills of using new technologies and improve their self-confidence. Young people must provide support to older people to shun this phobia.

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 is cyberspace?

.....
.....
.....
.....
.....

2) List two steps to overcome from the ICT phobia

.....
.....
.....
.....
.....

16.3 FAIR USE OF LEARNING RESOURCES

When you type any word or phrase on a search, you find thousands of related meaning or information. Today's world is full of information on your click. Whether you get right information or wrong information but you find lots of information available on the Internet. Similarly, learning resources are also available on the Internet. Many online courses are offered free of cost. MOOC (Massive Open Online Courses) are offered by many renowned educators/teachers

across the world. Some learning resources are freely accessible and some have copyright. In the following sections, we will discuss about ICT policy and how learning resources available through ICT can be used in a fair manner with the knowledge of copyright, plagiarism, private policy, etc..

16.3.1 ICT Policy

ICT policy provides strategies to ICT implementation in any sector. ICT policies are accepted and implemented by various government sectors involving issues in ICT. The main thrusts of ICT policy are tele-communication, broadcasting and the Internet. It stipulates guidelines for the use of ICT in the socio-economic activities. The policy consists of a plan of action in the form of guidelines for the users. A National ICT Policy is a policy created and implemented by government for the stakeholders who are dedicated to bring digital technology to all sectors and society so that they can benefit to access the information. ICT policy facilitates use of ICT in different sectors and encourage digitalization. It also regulates the information technology and telecommunications, networking, Internet and information security. The policy covers issues in e-Governance too.

National Policy on ICT in School Education

The National Policy on Education 1986, as modified in 1992, stressed the need to use educational technology to improve the quality of education. The policy statement led to two major centrally sponsored schemes, namely, Educational Technology (ET) and Computer Literacy and Studies in Schools (CLASS) paving the way for a more comprehensive centrally sponsored scheme – Information and Communication Technology @ Schools in 2004.. The significant role ICT can play in school education has also been highlighted in the National Curriculum Framework 2005 (NCF) 2005. Use of ICT for quality improvement also figures in Government of India's flagship programme on education, Sarva Shiksha Abhiyan (SSA). Again, ICT has figured comprehensively in the norm of schooling recommended by the Central Advisory Board of Education (CABE), in its report on Universalisation of Secondary Education, in 2005. With the convergence of technologies, it has become imperative to take a comprehensive look at all possible information and communication technologies for improving school education in the country. The comprehensive choice of ICT for holistic development of education can be built only on a sound policy. The initiative of ICT Policy in School Education is inspired by the tremendous potential of ICT for enhancing outreach and improving quality of education. This policy endeavours to provide guidelines to assist the States in optimizing the use of ICT in school education within a national policy framework. In 2012 the policy on ICT in School Education was developed. The following areas are covered in the policy.

- ICT in School Education covers challenges and issues, ICT literacy and competency enhancement, ICT enabled teaching learning processes, elective courses at higher secondary level, ICT for skill development (vocational and job oriented areas of general education), ICT for children with special needs, and ICT for open and distance learning.
- ICT for school management talks about automated and ICT managed school processes and school management information system.
- ICT infrastructure includes hardware, network and connectivity, software and enabling infrastructure.

- Digital Resources cover digital content and resources, development of content, sharing and dissemination of digital content and role of school library.
- Capacity Building talks about capacity building of in-service teachers, capacity building through pre-service teacher education, capacity building of school heads and capacity building of state / district education department personnel.
- Implementing and Managing the Policy covers programme monitoring and evaluation group, inter-ministerial group, national and state level agencies, role of the states, programme of action, advisory group, norms, standards and procedures, models for ICT infrastructure, regulatory measures and incentives
- Financing and Sustainability talks about financial aspects and sustainability.
- Monitoring and Evaluation covers monitoring, evaluation, sharing of results and findings and policy review.

For details about various areas covered in the policy, you may visit www.mhrd.gov.in.

(source: www.mhrd.gov.in -Policy on ICT in School Education, Department of School Education and Literacy Ministry of Human Resource Development Government of India 2012)

16.3.2 Internet Filtering

The internet filtering instrument uses numerous classification of technologies for collection of URLs. These consist of review by people, a licensed URL filtering engine, internally developed artificial intelligence analysis coding, and automated recognition of content tags. Internet filter is a software tool that allows parents, teachers and administrators to control the list of permitted and blocked websites. Originally, Internet filters were used at homes, at public schools and libraries. Eventually, the Internet filters were incorporated into businesses and private sectors to control Internet use in the workplace. Internet filters prevent employees from wasting work time and protecting the Internet from the malicious content. In certain countries, these are used to prevent citizens from accessing specific websites. There are various kinds of filtering techniques:

- **Host-based filtering:** Through this technique, the administrator installs software on the system. Its rules are made according to the needs of the administrator. Activities attempted outside these rules are prohibited.
- **Server-side filtering:** Companies and organizations normally adopt this at the gateway level. The company can install hardware or software that is capable of filtering traffic at the gateway level and rules would be configured that would apply to all users inside the company network.
- **Content filtering at the Internet Service Provider (ISP) level:** Many Internet service providers are providing this service at an additional cost. Companies and organizations which do not wish to invest in their own gateway-level content filtering device, can opt for this option and notify the ISP of their content filtering conditions. This method is not as effective as the other three options because users can bypass the filtering by changing the browser settings.

Some well-known Internet filters are (i) Norton Online Family, (ii) Net Nanny, (iii) Cyber Patrol, (iv) Parental Internet Filter (Source: <http://www.apu.edu/imt/policiesandprocedures/filtering/>).

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) Fill in the blank.

i) ICT policy on school education was developed in the year

4) What is Internet filtering? Describe various kinds of internet filtering techniques.

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

16.3.3 Managing Intellectual Property

Intellectual property has emerged as a major issue in education, especially due to the use of digital media and resources in the delivery of education. While intellectual property covers a broad range of concepts such as patents, copyrights, trademarks and designs, in this section we will focus only on copyrights. The copyright laws differ from country to country, though there is a general convention on it to which most countries are signatory. Thus, we will make general statements on copyright related issues, and would suggest you to consult your legal advisor, when in doubt. There are certain aspects of a copyright law that are subject to interpretations and sufficient cases are not available to make generalizations. Many a times, copyright laws are subject to interpretations and sufficient cases are not available to make generalization. Many a times, it takes time to get judicial verdict for copyright violation as legal case can linger from lower courts to upper courts and up to the supreme court of a country, and thus it involves wastage of time and resources. Protection of copyright is an important concern for educational institutions as they need to protect the intellectual property created by their faculty, and provide appropriate rewards to the creators of work. While we are not going to discuss how to safeguard intellectual property, we are more interested in how not to violate the laws and avoid legal battles. Educational institutions develop huge amount of learning materials. Therefore, it is important that copyright policies are in place to safeguard institutional interests.

What is Copyright?

Copyright is the exclusive rights given to the creator of the original work to reproduce, translate, adapt, copy, perform, authorize, receive royalty on the work and engage in any other economic benefits arising out of the work. The Copyrights Act 1957 (in India) protects the creator of the original work by making it illegal for others to use the original material without the creator's or owner's consent. Many teaching institutions appoint Copyright Officer to handle issues related to copyright, asking for permissions, payments to copyright holders and keeping records of copyright permissions granted by the institutions. Some other institutions advise the authors to get the copyright permission if third party materials are used beyond "fair dealing" clause. The fair use clause in copyright laws allows for a small proportion of work to be used without the need to seek permission from the copyright holder. However, the amount of "small" is open to interpretation. Moreover, it is also possible to use some works (one time only) in the classroom contexts, and that would not be violation of copyrights. But, in education contexts, the issue of fair use becomes complex. As the materials are printed, many institutions do earn profits out of the works.

16.3.4 Copyright in the Digital World

The issue of copyright becomes more complex in the digital world. Many access websites without password protection and make use of the web materials in their work. In fact, a website is like a book. So, the copyright laws are also applicable to the websites. Unless the author/creator of the website gives open permission to use the contents, we can't make use of the same in our work. However, fair use of the contents in the website for the purpose of research and criticism are always permitted. Some also think that the websites are in public domain. In fact, they are not. Any material under 'Public Domain' means that it is not covered by copyright laws or the intellectual rights. For example, in many countries, the expiry of copyright is considered from 50-70 years after the death of the creator. In United States, the Government works are not covered under copyrights and are available in public domain.

Who owns online courses and digital materials? This question is often asked by many, especially in the context of online learning. The materials created under hire (job) are normally owned by the employer. So, the learning materials created by a teacher under employment are the copyrights of the employer. However, this is governed by the contract of the teacher in many universities. Some even permit the teachers to take the course with them when they leave the university. So, institutions must have clarity on copyrights of the work created by them, especially those created by the staff and those created by outside consultants. Whatever may be the situation, while creating copyrighted work, it is important to use works of others as per accepted conventions, and permissions are taken from the copyright holder for tables, graphics and when a significant portion of text is used.

Bates (2000) provides the following advice on copyright for creators of digital materials:

- Use the same rules of print publication to digital materials, wherever possible.
- When in doubt, ask for permission. Usually permission is granted by the creator for non-profit use.

- Always password protect your course sites, and also inform the users that the materials in the site are for their personal use, and not for sharing with others.
- Provide link to other sites, rather than copy material and host in your server.
- While using links to other sites, check the copyright provisions in the site. If advised, inform the webmasters. Sometimes, due to heavy traffic on a site it may crash (if appropriate bandwidth is not available), and thus it is normally your responsibility to inform the sites, if you are directing large number of users to them.
- Clearly give copyright statement in your sites.
- Always acknowledge the use of other materials, especially indicate the permission taken. Don't give permission to use third party materials in your site. Refer the requesting person to the appropriate copyright holder.
- Educate all stakeholders about copyright and implications.
- Develop appropriate legal instruments, contracts, agreements following the copyright laws.

16.3.5 Plagiarism

Plagiarism is a major academic dishonesty and follows academic ethics. It is subject to sanctions like penalties, suspension from the working place, and even dismissal. Plagiarism is not a crime, but involves copyright violation. Plagiarism is a serious ethical offence in educational institutions and business sectors. Plagiarism and copyright violation overlap with each other, but they are not equivalent concepts. Many types of plagiarism are not found in copyright violation, which is defined by copyright law but are punishable. Plagiarism is not defined. Although the individual committing plagiarism is not punished by law, he/she is punished by the institution where he/she works in. Most used plagiarism softwares are discussed in the following sub-sections.

Turnitin: Turnitin is an Internet-based plagiarism-prevention commercial service created by iParadigms, LLC, first launched in 1997. Typically, universities and high schools buy licenses to submit essays to the Turnitin website, which checks the documents for contents which are not original. The results can be used to identify similarities to existing sources or can be used in formative assessment to help students learn how to avoid plagiarism and improve their writing. This is proprietary software. Students may be required by schools to submit essays to Turnitin, as a deterrent to plagiarism. This has been a source of criticism, with some students refusing to do so, as according to them, it constitutes a presumption of guilt. Additionally, critics have alleged that use of this proprietary software violates educational privacy as well as international intellectual property laws, and exploits students' works for commercial purposes by permanently storing them in Turnitin's private database. (source: www.turnitin.com)

URKUND: URKUND offers a fully-automated system for handling plagiarism. In short, students send their documents to their teachers by e-mail. Along the electronic route between students and teacher, the documents are checked against three central source areas: Internet, published material and student material. If any document displays similarities with the content in the three sources, the

system flags it for possible plagiarism. An analysis overview is generated and sent by e-mail to the teacher concerned. The analysis overview presents in a simplified form the information needed by the teacher in order to determine if plagiarism has occurred.

URKUND works as:

STUDENT - Students send their documents via e-mail, web upload or LMS to their teachers/professors. With the e-mail option, no software needs to be installed.

URKUND - When the documents arrive at URKUND, they are analysed against the content of three source areas: the Internet, Published Material and Student Material. When the analyses are finished, the documents and generated reports are forwarded to the teachers.

THE TEACHERS - The result of the analyses and the student documents are forwarded to the teacher's e-mail address of choice, straight into an LMS or the URKUND web-based in-box. URKUND provides easy, straight-forward plagiarism prevention with minimum workload. (source: <http://www.orkund.com/>)

16.3.6 Open Source and Open Content

In response to the complexities of the copyright regime, the open source movement has emerged in 1985 with the establishment of the Free Software Foundation (FSF)(<http://www.gnu.org/>) by Richard M. Stallman. The FSF had developed the General Public License (GPL) that is often called “copyleft” to allow programmers to release the software with its source code. In the year 1991, Linus Torvalds, a student of Helsinki University started a project that would spread to become the “poster child of open source” (Hart,2003). With the release of version 0.1 of the Linux Kernel as an operating system, open source as an alternative approach to software development became popular. In the mid-1990s, Netscape decided to publicize the source code of its browser, which led to the emergence of the Open Source Initiative (OSI)(<http://www.opensource.org/>) as an alternate institution to FSF. The OSI maintains that for any software to satisfy as open source,

- the source code must be distributed with the software or otherwise made available for no more than the cost of distribution;
- the software be allowed for re-distribution without any royalty payment to the creator; and
- the user can modify the source code and then distribute the modified software under the same terms.

Sometimes, the software released under open source is also called “Free and Open Source Software” (FOSS). To a certain degree, open source software is free of charge to the extent that they do not charge licensing fee for usage. However, it should not be confused as “freeware” that are made available free of cost in their executable form without the source code. In case of open source, the free is as freedom, and can be seen as:

- freedom to access the source code;
- freedom to use the software without paying any license fee;

- freedom to re-distribute; and
- freedom to modify the software and distribute.

Open source software is becoming popular in education due to the cost advantage. The software is free, and thus no payments are to be made. However, some service providers may take training and maintenance charges. Today, almost all proprietary software has an open source alternative that you can find on the net. Following the open source movement, in 2002 with the initiative of the UNESCO, the open content movement started which is now popularly known as Open Educational Resources(OER).

OER has been defined as “the provision of educational resources, enabled by information and communication technologies, for consultation, use and adaptation by a community of users for non-commercial purposes” (UNESCO, 2002). So, open content materials follow an open licence policy thereby permitting other users to use the work without permission. The emergence of Creative Commons licenses of OER has made it easier for creators of original work to specify the terms and conditions of use. Using OER materials, institution can save money and avoid duplication of work, The UNESCO has developed a website for the promotion of OER (/see [http:// oerwiki,iiep-unesco.org/](http://oerwiki.iiep-unesco.org/)). There are other such provisions available with huge content suitable for learners from kindergarten to lifelong learning. Some of these are:

- WikiEducator (www.wikieducator.org)
- Connections (www.cnx.org)
- Curriki (www.curriki.org)
- OER Commons (www.oercommons.org)

Creative Commons

Creative Commons is an organization set up to “enable the sharing and use of creativity and knowledge through free legal tools”. This comprises a set of copyright licenses that facilitate creators of pieces of intellectual property to classify the level of access they will allow others to their material.

You will find about Creative Commons in detail at <http://creativecommons.org/>, http://wiki.creativecommons.org/images/6/62/Creativecommons-informational-flyer_eng.pdf







License Conditions

Creative Commons specifically recommends an author to address the following issues before considering categorization of their work:

(see also http://wiki.creativecommons.org/Before_Licensing):

- 1) Ensure that the work produced is copyrightable.
- 2) Confirm that the author has the legal rights to claim authority over the work.
- 3) Be certain that they are aware of the full works, terms and aptitude of a CC license.
- 4) Know for sure what the author is licensing.
- 5) Verify that any affiliation the author has with any other party that has no other issue with the chosen license.

Table 16.1: Key CC Licenses

 <p>Attribution CC BY</p> <p>This license lets others distribute, remix, tweak, and build upon your work, even commercially, as long as they credit you for the original creation. This is the most accommodating of licenses offered. Recommended for maximum dissemination and use of licensed materials.</p>	 <p>Attribution-ShareAlike CC BY-SA</p> <p>This license lets others remix, tweak, and build upon your work even for commercial purposes, as long as they credit you and license their new creations under the identical terms. This license is often compared to "copyleft" free and open source software licenses. All new works based on yours will carry the same license, so any derivatives will also allow commercial use. This is the license used by Wikipedia, and is recommended for materials that would benefit from incorporating content from Wikipedia and similarly licensed projects.</p>
 <p>Attribution-NonCommercial CC BY-NC</p> <p>This license allows for redistribution, commercial and non-commercial, as long as it is passed along unchanged and in whole, with credit to you.</p>	 <p>Attribution-NonCommercial CC BY-NC</p> <p>This license lets others remix, tweak, and build upon your work non-commercially, and although their new works must also acknowledge you and be non-commercial, they don't have to license their derivative works on the same terms.</p>
 <p>Attribution-NonCommercial-ShareAlike CC BY-NC-SA</p> <p>This license lets others remix, tweak, and build upon your work non-commercially, as long as they credit you and license their new creations under the identical terms.</p>	 <p>Attribution-NonCommercial-NoDerivs CC BY-NC-ND</p> <p>This license is the most restrictive of our six main licenses, only allowing others to download your works and share them with others as long as they credit you, but they can't change them in any way or use them commercially.</p>

Source: <http://wiki.creativecommons.org>.

16.3.7 Privacy Policy

Privacy policies are one legal page that any site collecting any type of information from their customers should have. A privacy policy should cover:

- your use of cookies and other trackers;
- how you use personal information collected;
- who you distribute collected information to;
- contact information for erasing private information;
- information about third-party sites that might collect information (such as advertisers); and
- editing dates when the document is changed.

The sample given Box-1 is a privacy policy statement from guideline website <http://web.guidelines.gov.in>

Box-1

Privacy Policy

We do not collect personal information for any purpose other than to respond to you (for example, to respond to your queries). If you choose to provide us with personal information like filling out a Contact Us form with an e-mail address or postal address, and submitting it to us through the website, we use that information to respond to your message, and to help you get the information you have requested.

Our website never collects information or creates individual profiles for commercial marketing. While you must provide an e-mail address for a localised response to any incoming questions or comments to us, we recommend that you do NOT include any other personal information.

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) Define Plagiarism. What are two software commonly used for plagiarism check.

.....
.....
.....
.....
.....
.....
.....
.....

6) What is creative commons? List the six CC licensing.

.....
.....
.....
.....
.....
.....
.....
.....

16.4 TECHNOLOGY RESOURCES FOR AFFIRMING DIVERSITY

In order to meet the 21st century needs such as technological, informational, and interpersonal, schools need to implement instructional strategies which includes technological and interpersonal skills for students. Instructional strategies must include equitable access to technology and must encourage intercultural communication. While moving towards equitable access to technology, institution must facilitate multicultural teaching strategies by using educational technology. Teachers must get training or learn to integrate technology into multicultural teaching by keeping pedagogical and technological challenges. Teachers should work on higher-level thinking skills which requires synthesis and application of skills to new contexts. All the students need to have equal access to resources which include teaching, technology, and instructional materials, no matter what their races, colors, or national origins are.

16.5 TECHNOLOGY FOR EQUITABLE ACCESS TO RESOURCES

Let us first discuss ‘what is equitable access to resources?’ Equitable access means providing all access to technological devices like computer and Internet. Every student should have the opportunity to access to technology. The teacher also has the knowledge to use technology to provide quality learning experiences to students. Equitable access fills the socio-economic gaps and provide technology-based learning for all students. To achieve equitable access, institution must ensure provision of sufficient bandwidth and Internet connection speed for teaching and learning to happen at anytime and anywhere.

Why is equitable access important?

Technology has the power to reach the unreached people. It provides students an opportunity to access educational resources and interact with teacher using any means communication such as email, chat, discussion forum. Technology offers the way to enhance education for disadvantaged students. While planning for technology implementation, the institution must take care that students have minimum infrastructure at home to access the digital resources and at the institution for the students to access digital resources to enhance their knowledge and skill. Needs of students with special needs must be fulfilled by the technology.

Many education environments are now moving towards a Bring Your Own Device (BYOD) environment where students bring their own tablet, laptop or smartphone to institution. These devices are owned by them. Very often the government or community distributes devices to the students. For example, Tamil Nadu state government initiated a scheme to distribute laptop to the students who study in the government school. Similarly, central government came with Akash tablets for nominal amount. This facilitates students to access the device both at home and at institution for learning and interaction. Flipped class learning can be done where learning of the content is completed at home and students come to the class room for discussion and collaborative learning.

The Open Education Resources (OER) movement offers repository of digital resources that facilitate teaching and learning with free sharing of resources, pedagogy and materials.

16.6 IMPACT OF ICT ON SOCIO CULTURAL ISSUES

Technologies have a major impact on society, especially social media. The integration of new technologies into society, mainly the family, is having a major influence on social interaction among people. Literatures on this area mentioned that technologies impact the social interaction within families. Technologies help to connect generational gap and digital divides. However, because of social media, family members spend less time together among themselves. Thus, communications among family members are reduced. A lack of communication

among family members can have unfavorable impact on unity of the family. This leads to unhealthy relations among members within a family. According to Aarsand (2007), devices and social media such as “video games, computer games, Facebook, Instagram, WhatsApp and email” are now an integral part of children’s everyday lives. A digital divide has been created in the society. Digital divide is “the difference between those who know and those who do not know how to act in a digital environment” that means “a generation gap between those who master and do not master digital technology” (Aarsand2007).

16.6.1 ICT and Child Development

The desktop has been replaced with smart phones nowadays. Smart phones have all the features than a desktop has and allow students to text, chat, send images, and audio/video clips and post any time anywhere directly to each other through social media. Mobile devices especially smart phones are used by teenagers and have become part of their routine life. Because of the peer pressure, children force their parents to buy sophisticated mobile devices. Nowadays schools are not allowing students to bring mobiles to the school. Social media have good and bad information. Children may tempt to open bad information. Parents and teachers need to play an important role these days because the world is on click for our children. A child can connect other end of the world irrespective of any time and any space. One should be very careful in the digital world.

However, smart phones and mobile devices can be used for teaching and learning. Most schools use blended approach to teaching-learning. Teachers create discussion forum, Students interact and share the information among themselves through WhatsApp groups. Peer interaction and collaborative projects can be encouraged among students. Many schools have integrated ICT in their teaching learning process. ICT helps students update knowledge and skills. Since ICT has created both good and bad digital environment, parents and teachers should guide students properly to enrich their knowledge and skills using ICT.

16.6.2 Cyberbullying

Cyberbullying is the modern form of bullying done over the web. Cyberbullying is one of the most mentally destructive problems that people face today. Many young people spend most of their time in social media. When they come across negative words, images, and messages in the social media, they are psychologically disturbed. With the continuous addiction to social media, it is getting difficult to prevent cyber bullying. Apps and sites such as Whatsapp, Instagram, Snapshot, Facebook, Twitter, etc. are mostly used by the young people. Sometimes, they become victims of cyberbullying in these Apps and sites. We need new strategies to address and prevent cyberbullying in today’s hyper connected world. Let us discuss how to prevent cyberbullying? Sameer H. and Justin W. P. (2012) provided ten tips for teenagers to prevent cyberbullying. The following figure-1 explains how to prevent cyberbullying.

Preventing Cyberbullying

Top Ten Tips for Teens



Sameer Hinduja, Ph.D. and Justin W. Patchin, Ph.D.

January 2012

1. Educate yourself

To prevent cyberbullying from occurring you must understand exactly what it is. Research what constitutes cyberbullying, as well as how and where it is most likely to occur. Talk to your friends about what they are seeing and experiencing.

2. Protect your password

Safeguard your password and other private information from prying eyes. Never leave passwords or other identifying information where others can see it. Also, never give out this information to anyone, even your best friend. If others know it, take the time to change it now!

3. Keep photos "PG"

Before posting or sending that sexy image of yourself, consider if it's something you would want your parents, grandparents, and the rest of the world to see. Bullies can use this picture as ammunition to make life miserable for you.

4. Never open unidentified or unsolicited messages

Never open messages (emails, text messages, Facebook messages, etc.) from people you don't know, or from known bullies. Delete them without reading. They could contain viruses that automatically infect your device if opened. Also never click on links to pages that are sent from someone you don't know. These too could contain a virus designed to collect your personal or private information.

5. Log out of online accounts

Don't save passwords in form fields within web sites or your web browser for convenience, and don't stay logged in when you walk away from the computer or cell phone. Don't give anyone even the slightest chance to pose as you online through your device. If you forget to log out of Facebook when using the computer at the library, the next person who uses that computer could get into your account and cause significant problems for you.

6. Pause before you post

Do not post anything that may compromise your reputation. People will judge you based on how you appear to them online. They will also give or deny you opportunities (jobs, scholarships, internships) based on this.

7. Raise awareness

Start a movement, create a club, build a campaign, or host an event to bring awareness to cyberbullying. While you may understand what it is, it's not until others are aware of it too that we can truly prevent it from occurring.

8. Setup privacy controls

Restrict access of your online profile to trusted friends only. Most social networking sites like Facebook and Google + offer you the ability to share certain information with friends only, but these settings must be configured in ordered to ensure maximum protection.

9. "Google" yourself

Regularly search your name in every major search engine (e.g., Google, Bing, Yahoo). If any personal information or photo comes up which may be used by cyberbullies to target you, take action to have it removed before it becomes a problem.

10. Don't be a cyberbully yourself

Treat others how you would want to be treated. By being a jerk to others online, you are reinforcing the idea that the behavior is acceptable.

Sameer Hinduja, Ph.D. is an Associate Professor at Florida Atlantic University and Justin W. Patchin, Ph.D. is an Associate Professor at the University of Wisconsin-Eau Claire. Together, they lecture across the United States and abroad on the causes and consequences of cyberbullying and offer comprehensive workshops for parents, teachers, counselors, mental health professionals, law enforcement, youth and others concerned with addressing and preventing online aggression. The Cyberbullying Research Center is dedicated to providing up-to-date information about the nature, extent, causes, and consequences of cyberbullying among adolescents.

For more information, visit <http://www.cyberbullying.us>.

© 2012 Cyberbullying Research Center - Sameer Hinduja and Justin W. Patchin

16.6.3 Addiction, Anxiety and Stress Creation Using Technologies

Internet addiction is a disorder often caused by overuse of Internet. It may lead to anger, tension anxiety and unwanted behaviour. It is extremely damaging to person's health and social life. Internet addiction is growing at a fast rate and becoming a mental health problem. It leads to social, psychological and physical disorders. The people who have 'technology addiction' have physical problems such as sleep disturbance, back strain, eye strain, etc. They also face problems in family, workplace and social life leading to anxiety, stress and depression, wasting time, neglecting school work, responsibilities at home, and even not interacting with family members. It makes them more introvert and minimizes their interaction with family and society. Excessive use of the Internet can reduce concentration.

One should have self-discipline to use Internet and technologies to prevent the addiction. Parents, elders and teachers should keep an eye on their children for using Internet.

16.7 LET US SUM UP

In this unit, we discussed the social, legal and ethical issues on the use of ICT. We discussed ICT phobia, the symptoms of fear and how to overcome ICT phobia. We discussed ICT policies and internet filtering which facilitate safe use of resources available on the Internet. You also learnt about the copyright issues in the digital world. The open source, open content and creative commons licensing were explained. Technology resources to affirm diversity were discussed emphasizing that instructional strategies must include equitable access to technology for all students. Towards the end of this unit, we discussed impact of ICT on socio-cultural issues in which you have learnt ICT and child development, cyberbullying, addiction to technology, etc.

16.8 SUGGESTED READINGS AND REFERENCES

Aarsand, P. A. (2007). "Computer and Video games in Family Life: The Digital Divide a Resource in Intergenerational interactions." *Childhood*. 14(2):235-256.

Bate, A.W. (2000). *Managing Technological Change*, San /Francisco: Jossey-Bass

Hart, T. (2003). *Open Source in Education*. Unless otherwise expressly stated, all material is licensed under the Creative Commons Attribution-NonCommercialShareAlike License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-sa/1.0/> or send a letter to Creative Commons, 559 Nathan Abbott Way, Stanford, California 94305, USA.

UNESCO (2002). *Open and Distance Learning. Trends, Policy and Strategy Considerations*. Paris, UNESCO.

Unit 4: "Managing Technological Change" of block 1: "Communication Technology: Basics of Course "Educational Communication Technologies" of MA in Distance Education, 2010.

16.9 ANSWERS TO CHECK YOUR PROGRESS

- 1) Cyberspace is called online or internet environment. Cyberspace has provided space for faster growth of social media, different types of communication media became possible namely, interactive communications such as email, Facebook, twitter etc.
- 2) To overcome from the ICT phobia the following steps can be followed:
 - People who have ICT phobia can get training to practice new technologies for improve self-confidence.
 - Young people must provide support and help the older people suffering from this phobia. They should motivate and reward for their effort to overcome the fear of technology.
- 3) ICT policy on school education was developed in the year —2012—
- 4) Internet filter is a software tool that allows parents, teachers and administrators to control the list of permitted and blocked websites. Originally, Internet filters were used at homes and at public schools and libraries. Eventually, the Internet filters incorporated into businesses, private sectors to control internet use in the workplace. This facilitates to prevent employees from wasting work time and protecting the internet from the malicious content.
- 5) Plagiarism is measured academic dishonesty and follows academic ethics. It is subject to sanctions like penalties, suspension from the working place, and even dismissal. Plagiarism is not a crime, but can found copyright violation.

Trunitin and Urkund are commonly used plagiarism software.

- 6) Creative Commons is an organization set up to “enable the sharing and use of creativity and knowledge through free legal tools”. This comprises a set of copyright licenses that facilitate creators of pieces of intellectual property to classify the level of access they will allow others to their material.

CC licensing are (i) CC BY (ii) CC BY-SA (iii) CC BY-ND (iv) CC BY-NC (v) CC BY-NC-SA (vi) CC BY-NC-ND