Faculty of Specific Education

Blended Learning Program

Readings on the Field of Study (2)

For Third Year Students

By

Dr. Marwa Gamal Muhammad Shehata

Associate Professor of TEFL, Faculty of Education- Minia University

Introduction

This course is designed to enable students to read about some topics in English related to Technology. The course is divided into two units. The first unit is entitled "Digital Technologies". In this unit students are going to read about "What is Digital Technology?", "Examples of Digital Technologies" and "Digital Technologies inside Classrooms". In unit two entitled "The Internet as a Research Gate", students are going to read about "What is Web 1.0, Web 2.0, Web 3.0?", and the difference between them. Students also are going to read about "Web Quest" and Web Browsers". Throughout the course, students are asked post reading questions that seek to simulate their reading comprehension skills, reinforce their linguistic ability and expand their stock of vocabulary related to technological terminologies.

Unit One: Digital Technologies

General Objectives:

1. Familiarizing students with the Digital Technologies and its benefits for both the teacher and the students.
2. Acquainting students with examples of digital technologies.
3. Acquainting students with the role of digital technologies inside classrooms.

Unit One: Digital Technologies

Lesson One: What is Digital Technology?

Behavioral Objectives:

By the end of this lesson students will be able to:

1. define digital technology.
2. explain the benefits of using digital technology for both teachers and students.
3. give examples of digital technology.
4. mention what to consider when using technologies.
5. Illustrate how digital technology will improve teaching practices.

By digital technology we mean the use of computer and technology assisted strategies to support learning within schools. Approaches in this area vary widely, but generally involve: technology for students, where learners use programmes or applications designed for problem solving or open-ended learning; or technology for teachers, such as interactive whiteboards or learning platforms.

How effective is it?

Studies consistently find that digital technology is associated with moderate learning gains: on average, an additional four months' progress. However, there is considerable variation in impact. Evidence suggests that technology approaches should be used to supplement other teaching, rather than replace more traditional approaches. It is unlikely that particular technologies bring about changes in learning directly, but some have the potential to enable changes in teaching and learning interactions. For example, they can support teachers to provide more effective feedback or use more helpful representations, or they can motivate students to practice more. Studies suggest that approaches which individualize learning with technology (such as one to one laptop provision where pupils work through learning activities at their own pace, or individual use of drill and practice software) may not be as helpful as small group learning with technology or the collaborative use of technology. There is clear evidence that digital technology approaches are more beneficial for writing and mathematics practice than spelling and problem solving, and there is some evidence that they are more effective with young learners. Digital technologies in the Arab world are recognized as tools to support the student-centered approach in the classrooms.

Teachers who integrate the use of technologies in their instructional practices succeed in engaging students and ensuring an interactive learning environment. Despite the limited research on ICT integration on students' academic development, qualitative and quantitative studies provide evidence

that students who use technology in their learning became more responsible in making decisions for their learning, more autonomous and self-directed learners, and their higher order thinking skills were developed. For example, in an experimental study, Jordanian kindergarten students who used computers in the classroom did better on the fluency, elaboration, and originality dimensions when compared with the control group Studies have found that limited ICT resources, problems with electricity or internet connection and lack of government plans for ICT integration have been barriers to the implementation of Digital Technology approaches across the region. Others have suggested for teachers to be better prepared to integrate technology in their classroom through engaging them in formal training – either as part of preservice preparation programs or through continuing professional development. Professional development providers, are highly recommended to consider the conditions for effective teacher training relevant to the local context. Developing parents' awareness through workshops may be another effective way of increasing the effective utilization of ICT tools in the learning off their children**.**

How secure is the evidence?

There is extensive evidence of positive effects across age groups and for most areas of the curriculum. However, the variation in impact and the range of technologies available suggest that it is always important to monitor the impact on learning of any new approach. The pace of technological change means that the evidence is usually about yesterday's technology rather than today's, but average effects have remained consistent for some time, suggesting that the general message of – on average – moderate positive impact is likely to remain relevant.

What are the costs?

The total costs of using digital technologies – including all hardware – can be high, but most schools are already equipped with hardware such as computers and interactive whiteboards. Digital technology approaches often require additional training and support for teachers which can be essential in ensuring the technology is properly used and learning gains are made. Expenditure for an average programme is estimated at £300 per pupil for new equipment and technical support and a further £500 per class (£20 per pupil) for professional development and support. Costs are therefore estimated as moderate.

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What should I consider?

Effective use of digital technology is driven by learning and teaching goals rather than a specific technology: the technology is not an end in itself. You should be clear about how any new technology will improve teaching and

learning interactions. New technology does not automatically lead to increased attainment. How will any new technology support pupils to work harder, for longer, or more efficiently, to improve their learning? Pupils' motivation to use technology does not always translate into more effective learning, particularly if the use of the technology and the desired learning outcomes are not closely aligned. Teachers need support and time to learn to use new technology effectively. This involves more than just learning how to use the hardware or software; training should also support teachers to understand how it can be used for learning.

Lesson Evaluation

I. Fill in the Spaces in the following sentences with words from the box below: (10 marks)

Feedback -digital technology- autonomous - integrate - supplement- interactive –support- representations – self-directed.-responsible

- By …….. we mean the use of computer and technology assisted strategies to support learning within schools
- Technology approaches should be used to …….. other teaching approaches.
- Teachers who …….. the use of technologies in their instructional practices succeed in engaging students and ensuring an …….. learning environment.
- Teachers need …….. and time to learn to use new technology effectively.
- Students who use technology in their learning became more …….. in making decisions for their learning.
- Digital can support teachers to provide more effective …….. or use more helpful ……..
- Students who use technology in their learning became more responsible in making decisions for their learning, more …….. and …….. learners.

Evaluate the following statements as true or false: (10 marks)

1. Students who use technology in their learning became more self-directed learning.

2. Digital technologies can support teachers to provide more effective feedback or use more helpful representations.

3. Students who use technology in their learning became less responsible in making decisions for their learning.

4. Digital technologies are not beneficial for both teachers and students.

5. New technology does not automatically lead to increased attainment.

6. Using technology is not an end in itself.

7. Digital technologies in the Arab world are recognized as tools to support the teacher-centered approach in the classrooms.

8. Digital technology approaches often require additional training and support for teachers.

9. It is not important to train teachers to use technology.

10. There is clear evidence that digital technology approaches are not useful for writing and mathematics practice .

Unit One: Digital Technologies

Lesson two: Examples of Digital Technologies

By the end of this lesson students will be able to:

1. give examples of digital technologies.
2. illustrate the use of " Websites".
3. illustrate the use of " Smatphones".
4. illustrate the use of " Video streaming".
5. illustrate the use of " e-books"
6. illustrate the use of " Geolcation".
7. illustrate the use of "Blogs".
8. illustrate the use of " Social media".
9. illustrate the use of computers.
10. illustrate the use of " Computers".
11. illustrate the use of " printers".
12. illustrate the use if " self-scan machines".
13. illustrate the use of ATMs
14. illustrate the use of " Digital Cameras".
15. illustrate the use of " Robotics".

16. Illustrate the use of " Drones and Guided Missiles"

17. Illustrate the use of digital technologies in" Banking and Finances"

Digital technology has radically transformed almost every aspect of human life in recent years, including communications, the workplace, entertainment, travel, banking, and shopping. Below are 20 examples of digital technology followed by explanations for each of them

Twenty Digital Technology Examples

1. Websites
2. Buying and Selling Online
3. Smartphones
4. Digital Televisions
5. Video Streaming
6. eBooks
7. Digital Music
8. Geolocation
9. Blogs
10. Social Media
11. Computers
12. Printers
13. Self-Scan Machines
14. ATMs
15. Digital Cameras
16. Cars and Other Vehicles
17. Clocks
18. Robotics
19. Drones and Guided Missiles

20. Banking and Finances

1. Websites

The internet is itself the function of multiple pieces of digital technology, and websites are one of the most common ways that people access it. Websites give us all sorts of information and have become increasingly interactive—for example, not only can you see what's on at your local cinema, but you can buy your tickets, too.

2. Buying and Selling Online

Shopping online continues to grow and provides consumers with increasing choices and value. You can buy from a large retailer at the other end of the country, or from an individual in your home town. Likewise, selling online can be carried out large scale as a commercial enterprise, or just to make a little cash from selling an individual item you no longer need.

3. Smartphones

The introduction of mobile phones revolutionized communications, both through voice and texting. Now we have smartphones, which incorporate

many other types of digital technology such as cameras, calculators, and mapping. Phone apps are expanding consumer options even more.

4. Digital Television

Digital technology has transformed televisions in numerous ways. For starters, both the picture and audio quality have undergone dramatic improvements. Modern televisions can also be used to stream movies and shows, rather than just receive programs via an antenna or cable connection.

5. Video Streaming

Video streaming can be used for numerous purposes. You can watch movies or shows online. You can chat with people online and see them live using applications such as Skype, or web-based services such as Zoom.You can watch or stream live events using live streaming. Sites such as YouTube provide numerous other viewing options for information or entertainment. Steaming technology can increasingly be accessed through a variety of devices, including computers, televisions, and smartphones.

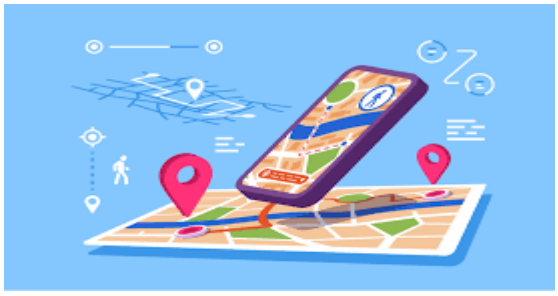
6. E-Books

Digital alternatives to traditional print are now plentiful. This enables users to access a multitude of reading materials from a single, portable device, so there's no longer the same need to carry around a lot of bulky, heavy books. It's easy to alter the font size and style to suit reader preferences. Plus, unlike with print books, there are no trees cut down to make them.

7. Digital Music

Digital audio arrived for consumers in the shape of compact disks, providing much greater sound quality than traditional analog. Nowadays, most music listeners stream their audio from the web, or buy and download tracks in the form of compressed audio formats such as MP3. The process of recording, editing, and promoting music have also been transformed.

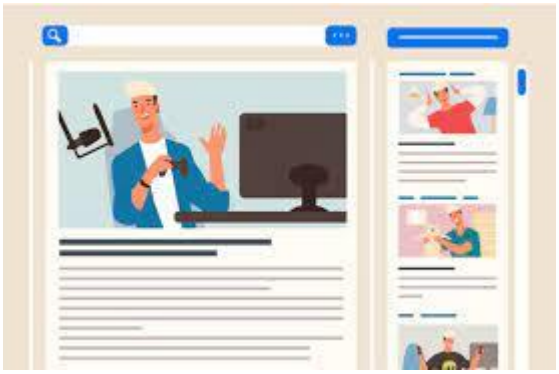
8. Geolocation



The combination of satellite and digital technology means that the location of a device, such as a mobile phone, GPS device, or internet-connected computer,

can be calculated very accurately. This information can then be used with other digital applications, such as mapping technology, to provide users with relevant information related to their location.

9. Blogs



Digital technology has enabled the creation of blogs, which are now commonly found across the web. These regularly updated websites usually contain personal reflections, typically written in an informal style. They are also increasingly interactive, containing links to videos and other media, and are often accompanied by readers' comments.

10. Social Media

Social media sites, such as Facebook, Twitter, and Instagram, have seen an explosion in popularity in recent years. They bring together multiple pieces of digital technology to enable users to interact via text, photos, video, as well as form social groups. Social media applications rely almost entirely on user-gene

11. Computers

Laptops, tablets, desktops, and other forms of computer depend upon digital technology to function. Originally computers were huge and used mainly by large companies and

scientific projects for performing complex calculations and storing large amounts of information. Nowadays, they are much more compact, as well as powerful, and can perform a multitude of tasks.

12. Printers

Printers are another digital device that are so commonplace nowadays that we pretty much take them for granted. Although in recent years, information increasingly tends to be stored rather than printed, life without these output devices would still be difficult to imagine. We also shouldn't forget 3D printers, which are increasingly presenting both new opportunities and challenges.

13. Self-Scan Machines

These machines have become increasingly common as they become more sophisticated and scanning technology such as RFID gradually replaces barcodes. Common examples include self-scanning of shopping products when buying at a store, and going through passport control in certain international airports.

14. ATMs

ATMs were invented in London in 1967 and since then have become ubiquitous, giving people a quick and easy way to access their bank accounts. Modern ATMs can be used for such things as cash withdrawals, to check bank balances, deposit money, or credit mobile phones.

15. Digital Cameras

These devices have much greater versatility than traditional cameras, especially when used in conjunction with other digital technology. Digital images are easier to store, organize, edit, email, and print. Most digital cameras can also capture video too.

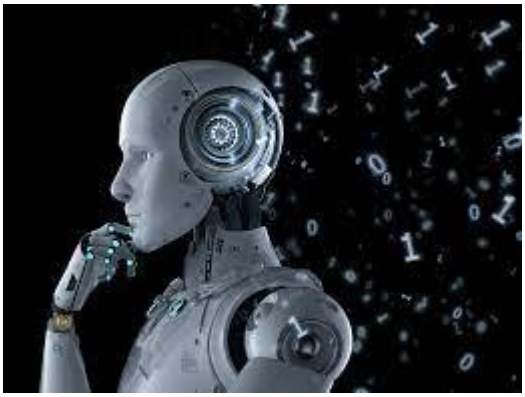
16. Cars and Other Vehicles

Modern cars have computers at their core to monitor and adjust the engine, control safety systems, as well as operate comfort, convenience, and security systems. Other vehicles such as boats and aircraft rely even more heavily on computers for their functionality. As technology continues to develop, it is only a matter of time before self-driving vehicles become the norm.

17. Digital Clocks

Digital clocks have a number of advantages over traditional analog clocks: They don't make a ticking sound; they are easy to read, even in the dark; and the alarms go off at the precise time that you set them. They can also be combined with radios, so that you wake up to your favorite show.

18. Robotics



As digital robotic technology becomes more sophisticated, it becomes more widely used. Robotic machine scan already be commonly found in the manufacturing industry. They are also used for tasks that are dangerous to humans, such as detecting and defusing bombs. Scientists are also working on nanorobots, tiny robots that can be injected into the human body to carry out medical investigations and procedures.

19. Drones and Guided Missiles

There are many military uses for digital technology. Drones (unmanned combat aerial vehicles) and guided missiles incorporate ddigital technology in order to operate effectively. Drones are typically directed in real time by a

remote human controller. Missiles use digital technology for their guidance, targeting, and flight systems.

20. Banking and Finances

Many people now do most of their ban king either on their computer, or their phone. There are apps for a range of other things too, such as checking your credit score, or paying your credit card bill.

Lesson Evaluation

I. Choose the correct answer from (a,b, c and d) (5 marks)

1. **……. give us all sorts of information and have become increasingly interactive.**

a. Robotics b. Websites c. Alarm clocks d. Geolocation

2. **Through ……can watch movies or shows online.**

a. video streaming b. ATMs c. self-Scan Machines d. printers

3. **……..don't make a ticking sound; they are easy to read, even in the dark.**

a. E-books b. Drones c. Self-scan machines d. Digital clocks

4. **…….. usually contain personal reflections, typically written in an informal style.**

a. Blogs b. ATMs c. Geolocation d. Robotics

5. **Modern ……..can be used for such things as cash withdrawals, to check bank balances, deposit money, or credit mobile phones.**

a. Printers b. Guided Missiles c. ATMs d. Drones

II. Fill in the Spaces in the following sentences with words from the box below: (10 marks)

Drones- nanorobots -televisions - Websites- consumers- print- antenna

- Modern ……..can also be used to stream movies and shows, rather than just receive programs via an ……. or cable connection.

- Shopping online continues to grow and provides ……. with increasingly choices and value.

- …….give us all sorts of information and have become increasingly interactive.

- The introduction of mobile phones ……..communications both through ……. and ……

- …….are typically directed in real time by a remote human controller.

- Scientists are also working on ……, tiny robots that can be injected into the human body to carry out medical investigations and procedures.

- Digital images are easier to store, organize, edit, email, and……..

III. Evaluate the following statements as true or false: (5 marks)

1. Drones are typically directed in real time by a remote human controller.

2. Digital technology is not a supportive tool for Missiles.

3. There are many military uses for digital technology.

4. You can check your credit score or pay credit card bill through your phone.

5. Robotics are used for detecting and defusing bombs.

6. Aircrafts and boats rely heavily on computers for their functionality.

7. Computers are much more compact, as well as powerful, and can perform a multitude of tasks.

8. Digital images are too difficult to manipulate.

9. Social media applications rely almost on user- gene.

10. Blogs are often accompanied by readers' comments.

11. Geolocation has to do with mapping technology to provide users with relevant information related to their location.

12. E-books enable users to access a multitude of reading materials.

13. The introduction of mobile phones revolutionized communication,

14. Websites provide all sorts of information.

15. Money withdrawal cannot be done with digital technology.

Unit One: Digital Technologies

Lesson three: Digital Technologies inside Classrooms

Behavioral Objectives:

By the end of this lesson students will be able to:

1. illustrate the benefits of digital technology in the classroom.
2. define " Flipped Classroom".
3. mention the benefits of flipped classrooms.
4. mention the risks of " Flipped Classrooms",
5. illustrate the benefits and risks of using " BYOD".
6. illustrate the benefits and the risks of using " E-portfolios".
7. define "Personal Learning Network".
8. Mention the benefits of using "Personal Learning Network".
9. Mention the risks of " Personal Learning Network".
10. define "Virtual Learning Environment".
11. mention the benefits of Virtual Learning Environment.
12. give examples of Virtual Learning Environment.
13. mention the risks of Virtual Learning Environment.
14. illustrate the benefits of the (IWB) Interactive Whiteboard.

15. illustrate the challenges of using digital technology inside the classroom.

16. ilustrate how can teachers support the use of technology inside the classroom.

In recent years reference to ‘digital technology in the classroom’ (DTC) can be taken to mean digital processing systems that encourage active learning, knowledge construction, inquiry, and exploration on the part of the learners, and which allow for remote communication as well as data sharing to take place between teachers and/ or learners in different physical classroom locations. This is an expanded notion of technologies that recognizes their development from mere information delivery systems and also clarifies their role in classrooms in contrast to their wider use across schools and learning centers.

What other terms are associated with digital technologies in the classroom?

Term	Definition	Example	Benefit(s)	Risk(s)
Bring your own device (BYOD)	learners bring their own technology into the classroom for use as part of the learning activity	mobile phone is used to browse the internet as part of a research activity	greater range of technologies available and lower cost to institution	difficult to control and monitor usage some learners may have better devices than others lack of teacher understanding/ training

Term	Definition	Example	Benefit(s)	Risk(s)
E-portfolios	learners and teachers create an electronic catalogue of work that tracks their learning journey. This is usually online and often uses multimedia files	a student portfolio of artwork is presented online through an e-portfolio. This includes scans of their sketches, photographs of displays and visits to galleries, written reflections, narrated videos of the artist (learner) at work and an audio logbook	provides a way of quickly and seamlessly presenting a wide variety of material in different formats including details of process	data security and confidentiality lack of teacher understanding/ training
Flipped classroom	learners discover new content before the lesson from online videos or resources and then apply this knowledge in more	learners watch a video at home about how sedimentary rocks are transformed into metamorphic rocks. In class they work in	more time for activities that promote deeper understanding and reflection	learners do not understand or are not able to access the flipped material flipped learning is not appropriate misunderstandings arise that are not addressed in class lack of teacher

Term	Definition	Example	Benefit(s)	Risk(s)
	personalized work in the classroom	groups to collaboratively create a diagram explaining this process of transformation		understanding/ training ensuring resources are up-to-date
Personal Learning Network (PLN)	a PLN is an individual's loose collection of links with other people or resources. The aim of such a network is to facilitate an exchange of ideas that supports learning	links can be through, for example: online interest groups for example on Twitter and/or online and face-to-face course	access to a wide range of perspectives and expertise beyond the confines of the physical institution	data security and confidentiality accuracy of information access to the network lack of teacher understanding/ training
Virtual Learning Environment (VLE)	a VLE is an e-learning education system that is web-based, but modelled on conventional	Moodle Blackboard	easy way to collate and organise courses and information flexibility of access	software can limit course structure high level of maintenance

Term	Definition	Example	Benefit(s)	Risk(s)
	face-to-face education. It provides access to courses, course content, assessments, homework, links to external resources etc			

- **Interactive Whiteboards (IWB)** allow images from a computer to be displayed through a digital projector, onto a large (usually wall-mounted) board. Users can interact with the content on the board using fingers or a stylus.

- Software Applications (Apps) are designed to operate on mobile devices such as smartphones and tablet computers.

- Web 2.0 refers to the second generation of the World Wide Web. Web 2.0 includes features and functionality that were not available before, for example. podcasts, blogs, wikis, RSS (Rich Site Summary – used for updating regularly changing web content), social networking and tagging**.**

What are the benefits of digital technologies in the classroom?

The potential benefits of DTC are that it can foster dialogic and emancipatory practice. – Dialogic practice is that in which students are active, engaged and empowered participants in a conversation from which learning emerges. For example, learners working on a maths modelling programme can start to have conversations about what they see on a computer screen without having to rely on terminology that they may not yet have (look at 'that', what happens if you do 'this'?) The teacher can then add the appropriate language into the conversation as the project develops.

Emancipatory practice is that in which an individual student's ideas go beyond the learning prescribed by the teacher/syllabus as they draw on knowledge gained outside formal education to construct understanding. For example, in music lessons learners can use their own knowledge and expertise of playing instruments or using technology to construct their own recording environments (perhaps using their mobile phone). They can then bring in ideas that they have created at home or in instrumental music lessons**.**

Different technologies can improve learning by augmenting and connecting learning activities. For example, in a geography lesson two classes in different schools may link up via the internet to explore cultural differences in relation to a particular global issue such as pollution or energy supply. The groups could work together to understand not just the issue itself but its impact on communities and individuals by talking to real people. In situations where bandwidth is limited this could be done at a whole class level via video or even over email or SMS (Short Message Service) messaging. • Digital technology can often also be exciting for

learners and offers a potentially more engaging alternative. At the same time it is important to be aware that some learners may be less confident in learning with digital technologies and steps need to be taken to ensure equality of access.

• Digital technology offers immediate feedback for both the learner and the teacher

What are the challenges/criticisms of digital technologies in the classroom?

A lot of time and resources are currently being invested into technologies and applications that have yet to be proven to be effective or efficient when compared to more traditional classroom learning contexts. Teachers and schools need to think carefully about when, why and how to use technologies as well as evaluating their efficiency and effectiveness.

• There is a 'digital divide' – the divide between those who have access to digital technology and the internet, and those that do not.

• Implementing and then maintaining technology is costly particularly as systems can quickly become out of date.

• There may be problems with the existing infrastructure, for example internet connections may be inconsistent and/or slow.

• Safety for students and teachers is a key challenge with prevention of cyber-bullying, the hacking of personal information, access to illegal or banned materials and distractions from learning (such as social networking and mobile phone use) all being high on institutional agendas.

• Some uses of technologies can be harmful. For example, poor posture and eyestrain are common problems when working at desktop computers for prolonged periods. Also Repetitive Strain Injury (RSI) is a risk that occurs from the repeated actions necessary to control mobile devices.

• Evidence suggests that at the moment the potential of digital technologies in the classroom is not being realised. A report on digital technologies from the charity Nesta in the UK notes, "What is clear is that no technology has an impact on learning in its own right; rather, its impact depends upon the way in which it is used" (2012:9).

Practical tips:

How can schools support the use of digital technologies in the classroom?

• Schools can allow teachers and learners the freedom to explore potential new uses of devices and systems as well as combinations of technologies into novel digital environments. For example:

– Raspberry Pi is one way to encourage teachers and learners to create technological solutions to problem based tasks (see www.raspberrypi.org).

– The Scratch programming interface is a further way of encouraging learners to create their own environments and has been used to develop understanding in a wide range of subjects (see scratch.mit.edu). This will help to foster the effective dialogue and emancipatory practice that is a component of deeper critical understanding.

• Teachers and learners should be encouraged to share their practice with each other in the classroom and more widely.

How can teachers support the use of digital technologies in the classroom?

Teachers can make the best use of technology in the classroom by developing their awareness of a range of digital technologies and considering carefully both how and why they can be used to support students' learning. Effective selection of software and devices is only part of the story. The consideration of what learning will be achieved and how the technology may help is fundamental to its effective deployment.

• The SAMR (Substitution, Augmentation, Modification, Redefinition) model developed by Dr Ruben Puentedura is a useful reference when considering the implementation of technology in the classroom.

Lesson Evaluation

Question One: Choose the correct answer from (a, b, c and d)

1. **……. Help to track the learning journey of both the teachers and learners.**

   a. Flipped Classrooms b. E-Portfolios C. Blogs d. Wikis

2. **……. can be one of the examples of Web 2.0**

   a. MOODLE b. Blackboard c. Podcasting d. E-portfolio

3. **……. is an example of "Virtual Learning Environment".**

   a. Blogs b. Wikis c. MOODLE d. E-portfolio

4. **One of the risks of using "E-portfolios" is …….**

   a. Data security and confidentiality.

   b. High level of maintenance.

   c. Easy way to organize information.

   d. Wide range of learners' reflections.

5. **All the following students describe "Flipped classroom" EXCEPT……..**

   a. A means to increase teacher contact time.

   b. Students working in isolation.

c. A class where all students are engaged in their learning.

d. An environment that increases students' responsibility.

6. **Flipped classrooms promote all the following EXCEPT…….**

a. Interaction

b. Flexibility

c. Personalized learning.

d. Passive learning

7. **One of the challenges of using technology inside the classroom is ……**

a. Digital divide

b. Effective selection of software.

c. The kind of feedback required.

d. Learners autonomy.

Question two: Evaluate the following sentences as true or false:

1.Software Applications are designed to operate on mobile devices such as smartphones and tablet computers.

2. Digital technology offers immediate feedback for both the learner and the teacher**.**

3. In Flipped classrooms promote less time for activities and understanding and reflection.

4. Using E-portfolios doesn't require any training from the part of the teacher.

5. Digital technology offers immediate feedback for both the learner and the teacher**.**

6. Digital technology doesn't allow for remote communication and data sharing.

7. Digital Technology in the Classroom (DTC) allows for active learning, knowledge construction and inquiry on the part of the learners.

8. E-portfolios help learners and teachers to track their learning journey.

9. Data security and confidentiality are some of the risks of using E-portfolios.

10. Flipped Classrooms develop learners Higher Order Thinking Skills.

11. "Moodle" and "Blackboard" are examples Personal Learning Net Work.

12. With Interactive Whiteboards users can interact with content easily.

13. Podcasts , blogs , Wikis are examples of Web 2.0 application.

14. With virtual learning environment it is difficult to organize courses and information.

15. The potential benefits of DTC are that it can foster dialogic and emancipatory practice.

16. Emancipatory practice is that in which students are active engaged and empowered participants in a conversation from which learning emerges.

17. Dialogic Practice is that in which an individual student's ideas go beyond the learning prescribed by the teacher / syllabus as they draw on knowledge gained outside formal education to construct understanding.

18. The scratch programing interface encourages learners to create their own environment.

19. Digital technology has no challenges.

20.Raspery pi is one way to encourage teachers and learners to create technological solutions to problem based tasks.

21. Some uses of technologies can be harmful.

Unit Two

The Internet as a Research Gate

General Objectives:

1. Familiarizing students with Web 1.0 , Web 2.0 and Web 3.0
2. Differentiating between Web 1.0 , Web 2.0 and Web 3.0
3. Familiarizing students with the concept of "Web Quest" its main parts and characteristics.
4. Familiarizing students with the history and the main features of "Web browsers"

Unit Two: The Internet as a Research Gate

Lesson One: Web Generations (Part I)

Behavioral Objectives:

By the end of this lesson students will be able to:

1. differentiate between the " Web " and the " Internet"
2. define the term " Web 1.0".
3. identify the origin of " Web 1.0".
4. illustrate the use of " Web 1.0".
5. define the term "web 2.0".
6. identify the main features of "web 2.0".
7. demonstrate knowledge of the nature of "web 2.0".
8. define the term " Web 3.0".
9. illustrate how does "web 3.0 work".
10. identify the main features of " Web 3.0".

Many people use “the Web” and “the Internet” interchangeably when they are, in fact, two different things. Furthermore, there’s more than one version of the Web. Are you intrigued yet? The Web, formerly referred to as the World Wide Web, is the pages/sites you see when you log online. The Internet is a series of interconnected computer systems the Web functions on, plus the medium allows files and e-mails to travel along.

What is Web 1.0?

Web 1.0 is the term used for the earliest version of the Internet as it emerged from its origins with Defense Advanced Research Projects Agency (DARPA) and became, for the first time, a global network representing the future of digital communications. It describes the first "iteration" of what became a growing, evolving medium that eventually expanded into a platform with profound multi-functional uses.

The early Internet was mostly composed of web pages joined by hyperlinks, without the additional visuals, controls and forms that we see when we log on today. Experts refer to it as the "read-only" web – a web that was not interactive in any significant sense. The web user was, for the most part, passive, and much of the user input took place offline. Generally, Individual webpages were made of static pages that were hosted on web servers run by an internet service provider (ISP) or on free web hosting services.

As stakeholders cobbled the Internet together from connected laboratories and commercial servers and other digital hop points, we hadn't developed the later infrastructure that would allow for "read/write" Internet functionality and much more. People logged on mostly to read about things, or to get updates on something, although very simple linear text chat was a feature of the later bulletin board system (BBS). Web users now may find it shocking that at the time of Web 1.0, running advertisements was banned.

Eventually, though, the use of dynamic URLs and other resources evolved what the Internet was able to do. Then came the cloud age, where software as a service could be delivered right over the Internet. Years later, today's Internet is barely recognizable as the successor to the early Web 1.0. Nearly

any kind of digital function that used to be housed in an “out of the box” licensed piece of software can be delivered through the web. That leads to massive efficiencies and even a rethinking of traditional concepts like client/server design.

Exactly where Web 1.0 ends and Web 2.0 begins cannot be clearly defined as this a change that happened gradually over time as the internet became more interactive. A read-only Internet is significantly a source of information and a research guide. What it is not is a vibrant virtual community for user input or a store for functionality.

In fact, it's interesting that even years later when full functionality is delivered over the web, many corporate functions and user experiences are instead provided through mobile applications on operating systems iOS and Android, rather than through an Internet browser. The browser can deliver nearly any sort of function that an app can provide; in fact, on modern smartphones, it’s a user preference to either access a social media platform or other tool from an app, or through the web.

One of the best visual examples of Web 1.0, the early read-only Internet, is the collections of GeoCities pages and other early designs that users can still find scattered throughout corners of the web, or in archives like the Wayback machine. Open one of these sites, and what you'll find is relatively rudimentary text and images positioned on the digital page, using pretty simple HTML code.

That Web 1.0 coding taught a generation to build web pages with the types of tags and commands that mostly styled, aligned and created color schemes for static content. Then, piece by piece, the web design environment became more evolved. Editor-type programs abstracted the use of HTML so that

designers had to learn less of it. Layer languages like Cascading Style Sheets (CSS) made it easier to code globally. Eventually the “look and feel” of the Internet became different, too. The old sites often look “dated” just like, say, a dining room or bathroom last renovated in the 1970s.

When you look at the old pages now, aside from these pages looking and feeling pretty simple, you won't find the elaborate web forms and other tools that characterize today's Internet, which we refer to as Web 2.0. In Web 2.0, it's easy for users to return data to a controlling server through a web form, dynamic URLs and more.

Another example is in e-commerce. A Web 1.0 e-commerce store would simply be a catalog through which the user can view products and services. There might be a button painstakingly created for the user to order, or there might just be an email address. The Web 2.0 e-commerce store has payment systems built right into accommodate credit card payments online. Users can post reviews, ask for refunds, and create their own transactions.

What is Web 2.0?

Web 2.0 describes the current state of the internet, which has more user-generated content and usability for end-users compared to its earlier incarnation, Web 1.0. In general, Web 2.0 refers to the 21st-century Internet applications that have transformed the digital era in the aftermath of the dotcom bubble.

It is important to note that:

- Web 2.0 describes the current state of the internet, which has more user-generated content and usability for end-users compared to its earlier incarnation, Web 1.0.
- Web 2.0 does not refer to any specific technical upgrades to the internet; it refers to a shift in how the Internet is used.
- In the new age of the Internet, there is a higher level of information sharing and interconnectedness among participants.
- Web 2.0 has allowed for the creation of applications such as Facebook, Twitter, Reddit, TikTok, and Wikipedia.
- Web 2.0 has paved the way for Web 3.0, the next generation of the web that uses many of the same technologies to approach problems differently.

Understanding Web 2.0

The term Web 2.0 first came into use in 1999 as the Internet pivoted toward a system that actively engaged the user. Users were encouraged to provide content, rather than just viewing it. The social aspect of the Internet has been particularly transformed; in general, social media allows users to engage and interact with one another by sharing thoughts, perspectives, and opinions. Users can tag, share, tweet, and like.

Web 2.0 does not refer to any specific technical upgrades to the internet. It simply refers to a shift in how the internet is used in the 21st century. In the new age, there is a higher level of information sharing and interconnectedness among participants. This new version allows users to actively participate in the experience rather than just acting as passive viewers who take in information.

Because of Web 2.0, people could now able to publish articles and comments, and it became possible to create user accounts on different sites, therefore increasing participation. Web 2.0 also gave rise to web apps, self-publishing platforms like WordPress, as well as social media sites. Examples of Web 2.0 sites include Wikipedia, Facebook, Twitter, and various blogs, which all have transformed the way the same information is shared and delivered.

What is Web 3.0?

Web 3.0 (Web3) is the third generation of the evolution of web technologies. The web, also known as the World Wide Web, is the foundational layer for how the internet is used, providing website and application services.

Web 3.0 is still evolving and being defined, and as such, there isn't a canonical, universally accepted definition. What is clear, though, is that Web 3.0 will have a strong emphasis on decentralized applications and make extensive use of blockchain-based technologies. Web 3.0 will also make use of machine learning and artificial intelligence (AI) to help empower more intelligent and adaptive applications.

Another aspect that is part of the emerging definition of Web 3.0 is the notion of a semantic web. Among those that have advocated for the integration of semantic technology into the web is the creator of the web, Tim Berners-Lee.

It took over 10 years to transition from the original web, Web 1.0, to Web 2.0, and it is expected to take just as long, if not longer, to fully implement and reshape the web with Web 3.0.

If the trend of change is traced from Web 1.0, a static information provider where people read websites but rarely interacted with them, to Web 2.0, an interactive and social web enabling collaboration between users, then it can be assumed that Web 3.0 will change both how websites are made and how people interact with them.

How does Web 3.0 work?

With Web 1.0 and Web 2.0 technologies, Hypertext Markup Language (HTML) defines the layout and delivery of webpages. HTML will continue to be a foundational layer with Web 3.0, but how it connects to data sources and where those data sources reside could be somewhat different than earlier generations of the web.

Many websites and nearly all applications in the Web 2.0 era rely on some form of centralized database to deliver data and help to enable functionality. With Web 3.0, instead of a centralized database, applications and services make use of a decentralized blockchain. With blockchain, the basic idea is that there isn't an arbitrary central authority, but rather a form of distributed consensus.

An emerging governance ideal within the blockchain and Web 3.0 community is the concept of a decentralized autonomous organization (DAO). Instead of having a central authority that governs the operations of a platform, with a DAO, Web 3.0 technologies and communities provide a form of self-governance in an attempted decentralized approach.

Web 3.0 also fundamentally works with cryptocurrency, more so than with fiat currency. Finance and the ability to pay for goods and services with a decentralized form of payment is enabled across Web 3.0 with the use of cryptocurrencies, which are all built and enabled on top of blockchain technology.

Both Web 1.0 and Web 2.0 were primarily built with the IPv4 addressing space. As a function of a massive growth of the web over the decades, there is a need in Web 3.0 for more internet addresses, which is what IPv6 provides.

Key Web 3.0 features

Web 3.0 may be constructed with AI, semantic web and ubiquitous properties in mind. The idea behind using AI comes from the goal of providing faster, more relevant data to end users. A website using AI should be able to filter through and provide the data it thinks a specific user will find appropriate. Social bookmarking as a search engine can provide better results than Google since the results are websites that have been voted on by users. However, these results can also be manipulated by humans. AI could be used to separate the legitimate results from the falsified, therefore producing results similar to social bookmarking and social media but without bad feedback.

An artificially intelligent web will also introduce virtual assistants, an element that is already emerging today as an aspect built into a device or through third-party apps.T he idea behind the semantic web is to categorize and store information in a way that helps teach a system what specific data means. In other words, a website should be able to understand words put in search queries the same way a human would, enabling it to generate and share better content. This system will also use AI; the semantic web will teach a computer what the data means, and then AI will take the information and use it.

There are several key Web 3.0 features that help to define what the third generation of the web will likely be all about, including the following:

- **Decentralized.** As opposed to the first two generations of the web, where governance and applications were largely centralized, Web 3.0 will be

decentralized. Applications and services will be enabled in a distributed approach, where there isn't a central authority.

- **Blockchain-based.** Blockchain is the enabler for the creation of decentralized applications and services. With blockchain, the data and connection across services are distributed in an approach that is different than centralized database infrastructure. Blockchain can also enable an immutable ledger of transactions and activity, helping to provide verifiable authenticity in a decentralized world.
- **Cryptocurrency-enabled.** Cryptocurrency usage is a key feature of Web 3.0 services and largely replaces the use of fiat currency.
- **Autonomous and artificially intelligent.** More automation overall is a critical feature of Web 3.0, and that automation will largely be powered by AI.

Lesson Evaluation

I. Choose the correct answer from (a, b, c and d).

1. Experts refer to …… as the " read-only web".

a. Web 1.0 b. Web 2.0 c. Web 3.0 d. Web 4.0

2. …….refers to the 21st century Internet applications.

a. Web 1.0 b. Web 2.0 c. Web 3.0 d. Web 4.0

3…….. is called the semantic web.

a. Web 1.0 b. Web 2.0 c. Web 3.0 d. Web 4.0

11. It is assumed that …….. will change both how websites are made and how people interact with them.

a.Web 1.0 b. Web 2.0 c. Web 3.0 d. Web 4.0

5. ……will make use of decentralized blockchain.

a.Web 1.0 b. Web 2.0 c. Web 3.0 d. Web 4.0

II. Evaluate the following statements as true or false:

1. Web 1.0 was not interactive in any significant sense.
2. The early internet was mostly composed of web pages joined by hyperlinks and additional visuals, controls and forms.
3. Experts refer to Web 2.0 as the " read –only " web .
4. The Web 1.0 user was for the most part passive and much of the user input took place offline.
5. Web 1.0 often dealt with static content.
6. Cascading style sheets made it easier to code globally.
7. Web 1.0 has allowed for the creation of applications such as Facebook, Twitter, Reddit and TikTok and Wikipeedia .
8. Web 2.0 refers to the 21st century Internet applications.

9. Web 2.0 does not refer to any specific technical upgrades to the internet, it refers to a shift in how the internet is used. Web 2.0 will change both how websites are made and how people interact with them.
10. More automation is a critical feature of web 3.0.
11. Cryptocurrency usage is a key feature of Web 2.0 services.
12. Web 2.0 has paved the way for Web 3.0.
13. Blockchain is the enabler for the creation of decentralized applications and services.
14. Web 3.0 will provide a form of self-governance in attempted decentralized approach.

III. Choose the correct term form the box and write it down in front of its appropriate acronym

- **WWW** ……
- **BBS** ……
- **DARPA** ……
- **CSS** ……
- **HTML** ……
- **DAO:** ……..

Cascading Style Sheet

Bulletin Board System

World Wide Web

Decentralized Autonomous Organization

Hyper Text Markup Language

Defense Advanced Research Project

Unit Two: The Internet as a Research Gate

Lesson Two: Web Generations (Part II)

Behavioral Objectives:

By the end of this lesson students will be able to:

1. differentiate between Web 1.0 and Web 2.0.
2. illustrate the components of Web 2.0.
3. define " Wikis".
4. describe" software applications".
5. mention the applications of web 2.0.
6. discuss the advantages and disadvantages of web 2.0.
7. compare between Web 1.0 and Web 2.0.
8. compare between Web 2.0 and Web 3.0.
9. illustrate the uses of uses of Web 1.0, Web 2.0 , Web 3.0.
10. mention the potentials and pitfalls of Web 3.0

Web 1.0 vs. Web 2.0

Web 1.0 is used to describe the first stage of the Internet. At this point, there were few content creators; most of those using the Internet were consumers. Static pages were more common than dynamic HTML, which incorporates interactive and animated websites with specific coding or language.

Content in this stage came from a server's filesystem rather than a database management system. Users were able to sign online guest books, and HTML forms were sent via email. Examples of Internet sites that are classified as Web 1.0 are Britannica Online, personal websites, and mp3.com. In general, these websites are static and have limited functionality and flexibility.

Web 1.0

- Static information (more difficult to change)
- More controlled user input
- Promoted individual contribution; channels were less dynamic
- Consider much more informative and data-driven

Web 2.0

- Dynamic information (always changing)
- Less control over user input
- Promotes greater collaboration, as channels are more dynamic and flexible
- Considered much more social and interactive-driven

Components of Web 2.0

There is no single, universally-accepted definition for Web 2.0. Instead, it's best described as a series of components that, when put together, create an online environment of interactivity and greater capacity compared to the original version of the web. Here are the more prominent components of Web 2.0.

Wikis

Wikis are often information repositories that collect input from various users. Users may edit, update, and change the information within a web page, meaning there is often no singular owner of the page of the information within. As opposed to users simply absorbing information given to them, wiki-based sites such as Wikipedia are successful when users contribute information into the site.

Software Applications

The early days of the web relied upon local software being installed on premise. With Web 2.0, applications gained a greater opportunity to be

housed off-site, downloaded over the web, or even offered as a service via web applications and cloud computing. This has shepherded in a new type of business model where companies can sell software applications on a monthly subscription basis.

Social Networking

Often one of the aspects most thought of when discussing Web 2.0. social networking is similar to wikis in that individuals are empowered to post information to the web. Whereas wikis are informational and often require verification, social networking has looser constraints on what can be posted. In addition, users have greater capabilities to interact and connect with other social networking users.

General User-Generated Content

In addition to social media posts, users can more easily post artwork, images, audio, video, or other user-generated media. This information shared online for purchase or may be freely distributed. This has led to greater distribution of content creator crediting (though creators are at greater risk for their content being stolen by others).

Crowdsourcing

Though many may think of Web 2.0 as allowing for individual contribution, Web 2.0 brought about great capabilities regarding crowdsourced, crowdfunded, and crowd-tested content. Web 2.0 let individuals collectively share resources to meet a common goal, whether that goal be knowledge-based or financial.

Applications of Web 2.0

The components above are directly related to the applications of Web 2.0. Those components allowed for new types of software, platforms, or applications that are still used today.

- **Zoom, Netflix, and Spotify** are all examples of software as a service (SaaS). With the greater capability of connecting individuals via Web 2.0, off-premise software applications are exponentially more capable and powerful.
- **HuffPost, Boing Boing, and Techcrunch** are blogs that allow users to input opinions and information onto web pages. These pages are informative similar to Web 1.0; however, individual contributors have a much greater capability in creating and distributing their own informative content.
- **Twitter, Instagram, and Facebook** are social media networks that allow for personalized content to be uploaded to the web. This content can then be shared with a private collection of friends or with the broad social media user base.
- **Reddit, Digg, and Pinterest** are also applications that allow for user input. These types of applications are more geared towards organizing social content around specific themes or topics, much like how original forums used to.
- **YouTube, TikTok, and Flickr** are even more examples of content sharing. However, specific applications specialize in the distribution of multimedia, video, or audio.

Advantages and Disadvantages of Web 2.0

Pros of Web 2.0

The development of technology has allowed users to share their thoughts and opinions with others, creating new ways of organizing and connecting with other people. One of the largest advantages of Web 2.0 is improved communication through web applications that enhances interactivity, collaboration, and knowledge sharing.

This is most evidence through social networking, where individuals armed with a Web 2.0 connection can publish content, share ideas, extract information, and subscribe to various informational feeds. This has brought about major strides in marketing optimization as more strategic, targeted marketing approaches are now possible.

Web 2.0 also bring about a certain level of equity. Most individuals have an equal chance of posting their views and comments, and each individual may build a network of contacts. Because information may be transmit more quickly under Web 2.0 compared to prior methods of information sharing, the latest updates and news may be available to more people.

Cons of Web 2.0

Unfortunately, there are a lot of disadvantages to the Internet acting more like an open forum. Through the expansion of social media, we have seen an increase in online stalking, doxing, cyberbullying, identity theft, and other online crimes. There is also the threat of misinformation spreading among users, whether that's through open-source information-sharing sites or on social media.

Individuals may blame Web 2.0 for misinformation, information overload, or the unreliability of what people read. As almost anyone can post anything via various blogs, social media, or out Web 2.0 outlets, there is an increased risk of confusion on what is real and what sources may be deemed as reliable.

As a result, Web 2.0 brings about higher stakes regarding communication. It's more likely to have fake accounts, spammers, forgers, or hackers that attempt to steal information, imitate personas, or trick unsuspecting Web 2.0 users into following their agenda. As Web 2.0 doesn't always and can't verify

information, there is a heightened risk for bad actors to take advantage of opportunities.

Web 2.0 vs. Web 3.0

The world is already shifting into the next iteration of the web (appropriately dubbed "Web 3.0"). Though both rely on many similar technologies, they use the available capabilities to solve problems differently.

One strong example of Web 3.0 relates to currency. Under Web 2.0, users could input fiat currency information such as bank account information or credit card data. This information could be processed by the receiver to allow for transactions. Web 3.0 strives to approach the transaction process using similar but different processes. With the introduction of Bitcoin, Ethereum, and other cryptocurrencies, the same problem can be solved in a theoretically more efficient way under Web 3.0.

Web 3.0 is more heavily rooted in increasing the trust between users. More often, applications rely on decentralization, letting data be exchanged in several locations simultaneously. Web 3.0 is also more likely to incorporate artificial intelligence or machine learning applications.

Web 2.0

- Focuses on reading and writing content
- May be more susceptible to less-secure technology
- May use more antiquated, simpler processing techniques
- Primarily aims to connect people

Web 3.0

- Focused on creating content
- Often has more robust cybersecurity measures

- May incorporate more advanced concepts such as AI or machine learning
- Primarily aims to connect data or information

What Are Examples of Web 2.0 Applications?

The most commonly cited examples of Web 2.0 applications include Facebook, Twitter, Instagram, or Tiktok. These sites allow users to interact with web pages instead of simply viewing them. These types of websites extend to sites like Wikipedia, where a broad range of users can help form the information that is shared and distributed on the web.

Is Web 2.0 and Web 3.0 the Same?

Web 2.0 and Web 3.0 use many of the same technologies (AJAX, JavaScript, HTML5, CSS3). Web 3.0 is more likely to leverage even more modern technologies or principles in an attempt to connect the information to drive even greater value.

Uses of Web 1.0, Web 2.0 , Web 3.0

- **Uses of Web 1.0:** Web 1.0 functions as a CDN (content delivery network), allowing a chunk of the website to be displayed on the website. As a result, it can be used as a personal website. The users would be charged in terms of each page view. It is made up of directories that allow its users to get a certain collection of information.
- **Uses of Web 2.0:** The social web comprises numerous platforms and tools. People contribute their opinions, insights, experiences, and thoughts on these sites. Thus, Web 2.0 tends to interact substantially more with its end users. These end users are not only the users of the programmes, but also the participants/viewers generated by podcasts, tagging, blogging,

RSS curation, Web content voting, Social media, Social networking, Social bookmarking, and many more.

- Uses of Web 3.0: Web 3.0 are enhanced variations of the original Web 1.0 from the 1990s and early 2000s. Web 3.0 is the next generation of the current web that we are familiar with.

Potential and Pitfalls of Web 3.0

Potentials

1. Data ownership. You will have the choice of what details you want to provide to companies and advertising agencies, and you will be able to make money off of it.
2. There are fewer middlemen.
3. Transparency - Every stakeholder will constantly be aware of the worth and business they are connected to.
4. The improvement of internet data connections will be made possible via the semantic web.

Pitfalls

1. Users will need a device with above-average hardware to access Web3.
2. For newbies, it could be a little challenging to understand.
3. Difficult to regulate.
4. Simple access to users' private and open data.

What Are the Differences Between the Web 1.0, Web 2.0, and Web 3.0?

Let's break down and examine the differences between the three Webs using this handy table.

Web 1.0	Web 2.0	Web 3.0
Typically read-only	Strongly read-write	Read-write-interact
Owned content	Shared content	Consolidated content
Visual/interactive Web	Programmable Web	Linked data Web
Home pages	Wikis and blogs	Waves and live streams
Web page	Web service endpoint	Data space
HTML/HTTP/URL/Portals	XML/RSS	RDF/RDFS/OWL
Page views	Cost per click	User engagement
File/web servers, search engines, e-mail, P2P file sharing, content and enterprise portals	Instant messaging, Ajax and JavaScript frameworks, Adobe Flex	Personal intelligent data assistants, ontologies, knowledge bases, semantic search functions

Web 1.0	Web 2.0	Web 3.0
Directories	Tagging the user	User behavior
Focus on the company	Focus on the community	Focus on the individual
Encyclopedia Britannica online	Wikipedia	The Semantic Web
Banner advertising	Interactive advertising	Behavioral advertising
Active 1989-2005	Active 1999-2012	Active 2006-ongoing

Lesson Evaluation

I. Choose the correct answer from (a,b,c and d)

1. Web 2.0……

(a) focuses on reading and writing content.

(b) focuses on creating content.

(c) may incorporate more advanced concepts such as AI or machine learning.

(d) primarily aims to content data or information

2. Web 3.0 ……

(a) primarily aims to connect people.

(b) focuses on reading and writing

(c) may incorporate more advanced concepts such as AI or machine learning.

(d) may use more antiquated, simpler processing techniques.

3. Web 1.0 focuses on ……

(a) the community.

(b) the company

(c) the individual

(d) users' interactivity

4. One of the pitfalls of web 3.0 is that ……

(a) the improvement of internet data connections will be made possible.

(b) you will have the choice of what details you want to provide,

(c) every stakeholder will constantly be aware of the worth and business they are connected to.

(d) users will need a device with above-average hardware to access web 3.0.

II. Evaluate the following statements as true or false:

1.Wikis are informational and often require verification.

2. Social networking has looser constraints on what can be posted.

3. Web 1.0 promotes greater collaboration, as channels are more dynamic and flexible.

4. Web 1.0 is considered much more informative and data driven.

5. Web 2.0 has less control over user input.

6. Web 1.0 let individuals collaboratively share resources to meet a common goal.

7. Twitter, Instagram and Facebook are social media networks that allow for personalized content to be uploaded to the web.

8. One of the largest advantages of Web1.0 is the improved communication through web applications that enhances interactivity.

9. Online stalking, doxing, cyberbullying and identity theft are some of the disadvantages of Web 2.0.

10. Applications in Web 3.0 rely on decentralization.

11. Web 2.0 is more likely to incorporate artificial intelligence or machine learning.

Unit two: The Internet as a Research Gate

Lesson three: WebQuest

Behavioral Objectives:

By the end of this lesson, students will be able to:

1.define "WebQuest".

2. identify the main characteristics of WebQuest.

3. identify the essential parts of a webquest.

4. identify the role of webquests in Education.

5. mention the limitations of webquests.

6. illustrate how webquests are developed.

7.illustrate the developments in webquest methodologies.

A **WebQuest** is an inquiry-oriented lesson format in which most or all the information that learners work with comes from the web. These can be created using various programs, including a simple word processing document that includes links to websites.

Distinguishing Characteristics

A WebQuest is distinguished from other Internet-based research by four characteristics. First, it is classroom-based. Second, it emphasizes higher-order thinking (such as analysis, creativity, or criticism) rather than just acquiring information. And third, the teacher preselects the sources, emphasizing information use rather than information gathering. Finally,

though solo WebQuests are not unknown, most WebQuests are group work with the task frequently being split into roles.

Structure

A WebQuest has 5 essential parts: introduction, task, process, resources, evaluation, and conclusion. The original paper on WebQuests had a component called guidance instead of evaluation.

Task

The task is the formal description of what the students will produce in the WebQuest. The task should be meaningful and fun. Creating the task is the most difficult and creative part of developing a WebQuest.

Process

The steps the students should take to accomplish the task. It is frequently profitable to reinforce the written process with some demonstrations.

Resources

The resources the students should use. Providing these helps focus the exercise on processing information rather than just locating it. Though the instructor may search for the online resources as a separate step, it is good to incorporate them as links within the process section where they will be needed rather than just including them as a long list elsewhere. Having off-line resources like visiting lecturers and sculptures can contribute greatly to the interest of the students.

Evaluation

The way in which the students' performance will be evaluated. The standards should be fair, clear, consistent, and specific to the tasks set.

Conclusion

Time set aside for reflection and discussion of possible extensions.

Use in Education

Webquests can be a valuable addition to a collaborative classroom. One of the goals is to increase critical thinking by employing higher levels of Bloom's Taxonomy and Webb's Depth of Knowledge. This is a goal of the American educational system's Common Core and many new American state standards for public education. Since most webquests are done in small collaborative groups, they can foster cooperative learning and collaborative activities. Students will often be assigned roles, allowing them to roleplay in different positions, and learn how to deal with conflict within the group.

Webquests can be a versatile tool for teaching students. They can be used to introduce new knowledge, to deepen know ledge, or to allow students to test hypotheses as part of a final interaction with knowledge. The integration of computers and the Internet also increase students' competency with technology. By having specific task lists, students can stay on task. By having specific sources of information, students can focus on using resources to answer questions rather than vetting resources to use which is a different skill altogether.

In inclusive classrooms (classrooms that have students of varying exceptionalities interacting such as learning disabled, language impaired, or giftedness) tasks can be differentiated to a skill level or collaborative groups for the same level of task. A skill level may have students with learning disabilities working on a basic task to meet the minimum standard of learning skills and gifted students pushing their task to the higher end of the learning skill. More commonly, groups are composed of learners of all skill levels and completing the same level of task. This is typically easier because the teacher is only creating one webquest, but can cause less student interaction from lower students and less learning from higher students.

Limitations of WebQuests

WebQuests are only one tool in a teacher's toolboxes. They are not appropriate to every learning goal. In particular, they are weak in teaching factual total recall, simple procedures, and definitions.

WebQuests also usually require good reading skills, so are not appropriate to the youngest classrooms or to students with language and reading difficulties without accommodations. One might ask an adult to assist with the reading or use screen-reading technologies, such as Voice Over or Jaws.

How WebQuests are developed?

Learners typically complete WebQuests as cooperative groups. Each learner within a group can be

given a "role," or specific area to research. WebQuests may take the form of role-playing scenarios, where students take on the personas of professional researchers or historical figures.

A teacher can search for WebQuests on a particular topic or they can develop their own using a web editor like Microsoft FrontPage or Adobe Dreamweaver. This tool allows learners to complete various tasks using other cognitive tools boxes (e.g. Microsoft Word, PowerPoint, Access, Excel, and Publisher). With the focus of education increasingly being turned to differentiated instruction, teachers are using WebQuests more frequently. WebQuests also help to address the different learning styles of each student. The number of activities associated with a WebQuest can reach almost any student.

WebQuests may be created by anyone; typically they are developed by educators. The first part of a WebQuest is the introduction. This describes the WebQuest and gives the purpose of the activity. The next part describes what students will do. Then is a list of what to do and how to do it. There is usually a list of links to follow to complete the activity.

Finally, WebQuests do not have to be developed as a true web site. They may be developed and implemented using lower threshold (less demanding) technologies, (e.g. they may be saved as a word document on a local computer).

Developments in WebQuest methodologies

The WebQuest methodology has been transferred to language learning in the 3D virtual world Second Life to create a more immersive and interactive experience.

Tools

WebQuests are simple webpages, and they can be built with any software that allows you to create websites. Tech-savvy users can develop HTML in Notepad or Notepad++, while others will want to use the templates available in word processing suites like Microsoft Word and OpenOffice. More advanced web development software, like Dreamweaver and FrontPage, will give you the most control over the design of your webquest. Webquest templates allow educators to get a jump start on the development of WebQuest by providing a pre-designed format which generally can be easily edited. These templates are categorized as "Framed" or "Unframed," and they can have a navigation bar at the top, bottom, left, or right of the content.

There are several websites that are specifically geared towards creating webquests. Questgarden, Zunal, and Teacherweb all allow teachers to create accounts, and these websites walk them through the process of creating a webquest. OpenWebQuest is a similar service, although it is based in Greece and much of the website is in Greek. These websites offer little control over design, but they make the creation process very simple and straightforward.

Alternatively, teachers can use one of a number of free website services to create their own website and structure it as a webquest. Wordpress and Edublogs both allow users to create free blogs, and navigation menus can be created to string a series of pages into a webquest. This option offers a greater deal of flexibility than pre-made webquests, but it requires a little more technical know-how.

Lesson Evaluation

Question One: Complete the following sentences:

1. A WebQuest is defined as…….
2. A WebQuest is distinguished from other Internet-based research by four characteristics ……..,……..,……..and …….
3. A WebQuest has five essential parts: ……..,……..,……..,……..and …….
4. The original paper on WebQuests had a component called …….. instead of …….
5. The standards should be ……, …….., …….., and ……. …….
6. The task of the Webquest should be …….. and ……..
7. Since webQuests are done in small collaborative groups, they can foster …… and ……...
8. ……..,…… and …… allow teachers to create accounts and these websites help in creating a WebQuest.
9. ……. and …….both allow users to create free blogs, and navigation menus can be created to string a series of pages into a webquest.
10. More advanced web development software, like ……. and ……., will give you the most control over the design of your webquest.

Question Two: Evaluate the following sentences as true or false:

Creating the task is the most difficult and creative part of developing a WebQuest.

1. A WebQuest has four essential parts.
2. WebQuests also usually require good reading skills.
3. WebQuests are appropriate to the youngest classrooms or to students with language and reading difficulties without accommodations.
4. WebQuests are weak in teaching factual total recall, simple procedures, and definitions.
5. WebQuests do not have to be developed as a true web site.
6. WebQuests allow students to test hypotheses as part of a final interaction with knowledge.
7. WebQuests do not help in fostering higher order thinking.
8. WebQuests are can be built with any software.
9. WebQuests are appropriate to every learning goal.

Unit two: The Internet as a Research Gate

Lesson four: Web Browsers

Behavioral Objectives:

By the end of this lesson students will be able to:

1. define a " Web browser".
2. differentiate between "a web browser" and a "search engine".
3. identify the purpose of a web browser".
4. identify the history of web browsers.
5. identify the user interface (UI) features of most browsers.
6. identify some different settings of a web browser.

A **web browser** (also referred to as an **Internet browser** or simply a **browser**) is application software for accessing the World Wide Web or a local website. When a user requests a web page from a particular website, the web browser retrieves the necessary content from a web server and then displays the page on the user's device.

A web browser is not the same thing as a search engine, though the two are often confused. A search engine is a website that provides links to other websites. However, to connect to a website's server and display its web pages, a user must have a web browser installed.

Web browsers are used on a range of devices, including desktops, laptops, tablets, and smartphones. In 2020, an estimated 4.9 billion people used a browser. The most used browser is Google Chrome, with a 63% global market share on all devices, followed by Safari with 20%.

In Hypertext Transfer Protocol technical texts, web browsers (and other clients) are commonly referred to as user agents.

Function

The purpose of a web browser is to fetch content from the Web or from a local storage device and display it on a user's device.

This process begins when the user inputs a Uniform Resource Locator (URL), such as *https://en.wikipedia.org/*, into the browser. Virtually all URLs on the Web start with either *http:* or *https:* which means the browser will retrieve them with the Hypertext Transfer Protocol (HTTP). In the case of secure mode (HTTPS), the communication between the browser and the web server is encrypted for the purposes of security and privacy.

Once a web page has been retrieved, the browser's rendering engine displays it on the user's device. This includes image and video formats supported by the browser. Many web browsers can display partial content, while the retrieval is still in progress, providing more responsive behavior, especially on slower network connections.

Web pages usually contain hyperlinks to other pages and resources. Each link contains a URL, and when it is clicked or tapped, the browser navigates to the new resource. Thus, the process of bringing content to the user begins again.

Most browsers use an internal cache of web page resources to improve loading times for subsequent visits to the same page. The cache can store

many items, such as large images, so they do not need to be downloaded from the server again. Cached items are usually only stored for as long as the web server stipulates in its HTTP response messages.

Setting

Web browsers can typically be configured with a built-in menu. Depending on the browser, the menu may be named Settings, Options, or Preferences.

The menu has different types of settings. For example, users can change their homepage and default search engine. They can also change default web page colors and fonts. Various network connectivity and privacy settings are also usually available.

Privacy

During the course of browsing, cookies received from various websites are stored by the browser. Some of them contain login credentials or site preferences. However, others are used for tracking user behavior over long periods of time, so browsers typically provide a section in the menu for deleting cookies. Finer-grained management of cookies usually requires a browser extension.

Browsers also usually provide menu items for deleting browsing history, cache entries, and other potentially sensitive data.An alternative approach is the private browsing mode, in which the aforementioned items are not stored by the browser. But this is a temporary option, only activated when using this special mode.

Features

The most popular browsers have a number of features in common. They automatically log browsing history or can be used in a non-logging private mode. They also allow users to set bookmarks, customize the browser

with extensions, and can manage user passwords. Some provide a sync service and web accessibility features.

Most browsers have these user interface (UI) features:

- Allow the user to open multiple pages at the same time, either in different browser windows or in different tabs of the same window.
- Back and forward buttons to go back to the previous page visited or forward to the next one.
- A refresh or reload and a stop button to reload and cancel loading the current page. (In most browsers, the stop button is merged with the reload button.)
- A home button to return to the user's home page.
- An address bar to input the URL of a page and display it, and a search bar to input terms into a search engine. (In most browsers, the search bar is merged with the address bar.)

While mobile browsers have similar UI features as desktop versions, the limitations of touch screens require mobile UIs to be simpler. The difference is significant for users accustomed to keyboard shortcuts. The most popular desktop browsers also have sophisticated web development tools. Besides the common usage of graphical browsers, there are niche text-based and headless types of browsers.

Security

Web browsers are popular targets for hackers, who exploit security holes to steal information, destroy files, and other malicious activities. Browser vendors regularly patch these security holes, so users are strongly encouraged to keep their browser software updated. Other protection measures are antivirus software and avoiding known-malicious websites.

History

The first web browser, called World Wide Web, was created in 1990 by Sir Tim Berners-Lee. He then recruited Nicola Pellow to write the Line Mode Browser, which displayed web pages on dumb terminals.

1993 was a landmark year with the release of Mosaic, credited as "the world's first popular browser". Its innovative graphical user interface made the World Wide Web system easy to use and thus more accessible to the average person. This, in turn, sparked the Internet boom of the 1990s, when the Web grew at a very rapid rate. Marc Andreessen, the leader of the Mosaic team, soon started his own company, Netscape, which released the Mosaic-influenced Netscape Navigator in 1994. Navigator quickly became the most popular browser.

Microsoft debuted Internet Explorer in 1995, leading to a browser war with Netscape. Within a few years, Microsoft gained a dominant position in the browser market for two reasons: it bundled Internet Explorer with its popular Windows operating system and did so as freeware with no restrictions on usage. The market share of Internet Explorer peaked at over 95% in the early 2000s.

In 1998, Netscape launched what would become the Mozilla Foundation to create a new browser using the open source software model. This work evolved into the Firefox browser, first released by Mozilla in 2004. Firefox market share peaked at 32% in 2010.

Apple released its Safari browser in 2003. Safari remains the dominant browser on Apple devices, though it did not become popular elsewhere.

Google debuted its Chrome browser in 2008, which steadily took market share from Internet Explorer and became the most popular browser in 2012. Chrome has remained dominant ever since.

Microsoft released its Edge browser in 2015 as part of the Windows 10 release. (Internet Explorer is still used on older versions of Windows.)

Since the early 2000s, browsers have greatly expanded their HTML, CSS, JavaScript, and multimedia capabilities. One reason has been to enable more sophisticated websites, such as web apps. Another factor is the significant increase of broadband connectivity, which enables people to access data-intensive content, such as YouTube streaming, that was not possible during the era of dial-up modems.

Lesson Evaluation

I. Complete the following statements :

1. A web browser is ……..

2.A web browser retrieves the necessary content from ……

3. "URL" stands for …….

4. A search engine is ……

5. To connect to a website's server and display its web pages, a user must have a ……. installed

6. "HTTP" stands for …….

7. Web browsers can typically be configured with a built-in menu. Depending on the browser, the menu may be named ……., …… or …….

8.The most used browser is …….

9.In most browsers, the search bar is merged with the ……

10.The first web browser, called …….., was created in 1990 by ……..

11…….remains the dominant browser on Apple devices, though it did not become popular elsewhere

II. Evaluate the following statements as true or false:

1. Web browsers are popular targets for hackers.

2."Internet explorer " remains the dominant browser on Apple devices.

3. The first web browser was called "Firefox".

4. Most browsers have several user interface (UI) features.

5. Web browsers are used on a range of devices including desktops, laptops, tablets, and smartphones.