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Mustapha Stambouli University

Faculty of Lettres and Languages

The Department of French Language and Literature

Course Support - TIC and E-Learning *for first-year LMD students. Hybrid*

ICT AND E-LEARNING 1 AND 2

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FOREWORD

This pedagogical support is designed for first-year LMD students in the Department of French Language and Literature. It introduces the essential foundations of information and communication technologies and e-learning practices in a university context. The document has been organized to facilitate progressive learning, autonomous revision, and practical application.

The original lecture content has been preserved. Formatting, sectioning, headers, page numbering, and additional chapters have been added to improve readability and academic presentation.

GENERAL PRESENTATION OF THE COURSE SUPPORT

1. General information

Course title: TIC and E-Learning 1 and 2. Level: First-year LMD students. Weekly workload: 1h30 per week over 15 weeks, equivalent to 22h30. Credits: 1. Coefficient: 1.

2. General teaching objectives

The course aims to introduce students to basic digital technologies, Internet use, academic communication tools, online learning platforms, and safe digital practices.

3. Targeted competencies at the end of the course

By the end of the course, students should be able to use basic digital tools, navigate academic online environments, communicate by e-mail, understand the functions of e-learning platforms, and adopt safe behavior online.

4. Recommended prior knowledge

Students are expected to have basic familiarity with computer components and the use of the Internet for academic and scientific purposes.

ORGANIZATION OF THE COURSE SUPPORT

The support is divided into two major parts. The first part introduces computer networks, computer science, the Internet, e-mail, and Internet safety. The second part focuses on editing software, Microsoft Word, social networks, social media, and selected extensions related to MOOCs, learning management systems, Moodle, and artificial intelligence in e-learning.

PRESENTATION OF THE CONTENTS AND OBJECTIVES

DESCRIPTIVE SHEET OF THE TEACHING UNIT (UE)

The following descriptive sheets present the main information, objectives, prior knowledge, content, and assessment mode of the teaching unit for both semesters.

Semester 1- TIC & E-LEARNING 1

Element	Description
Field of study	Letters and Foreign Languages
Teaching Unit	Methodological
Subject	TIC & E-LEARNING 1
Credits	01
Coefficient	01
Teaching unit code	UEM
Module coordinator	Chentouf Soumia
Teaching objectives	Introduce students to the information technologies required for access to Licence and Master's degrees, as well as e-learning practices, tools, advantages, and limits.
Expected learning outcome	By the end of the first year, the student should be able to develop competencies in digital information and communication technologies in a university context.
Recommended prior knowledge	Main components of a computer and their functions; use of the Internet for academic and scientific purposes.

Course content	Information and Communication Technology (ICT): introduction to word-processing software; Word, PowerPoint, and Word-to-PDF conversions; introduction to Google products and applications; creation of e-mail addresses and electronic correspondence techniques.
Assessment mode	Continuous assessment (100%).

Semester 2 - TIC & E-LEARNING 2

Element	Description
Field of study	Letters and Foreign Languages
Teaching Unit	Methodological
Subject	TIC & E-LEARNING 2
Credits	01
Coefficient	01
Teaching unit code	UEM
Module coordinator	Chentouf Soumia
Teaching objectives	Introduce students to the information technologies required for access to Licence and Master's degrees, as well as e-learning practices, tools, advantages, and limits.
Expected learning outcome	By the end of the first year, the student should be able to develop competencies in

	digital information and communication technologies in a university context.
Recommended prior knowledge	Main components of a computer and their functions; use of the Internet for academic and scientific purposes.
Course content	E-learning: introduction to university teaching platforms such as Moodle; identification, downloading, and uploading documents; quizzes and forums; introduction to open-access platforms such as MOOCs and Classroom; introduction to videoconferencing platforms such as Zoom and Google Meet.
Assessment mode	Continuous assessment (100%).

LECTURE 01: Networking

1- Networks

A computer network is a means of communication allowing individuals or groups (companies) to share information. It is a set of equipment and tools (hardware and software), allowing resources and services to be shared.

2- Advantages of Computer Networks

- Sharing of material resources: printer, CD-ROM, modem, hard disk, etc.
- Communication between people: email, online chat, etc.
- Sharing documents: files, folders, images, etc.
- Application sharing: database, …

3- Networks Architectures

All networks are based on one of the following architectures:

- Peer to Peer (P2P) networks

A peer-to-peer network is a simple network of computers. It first came into existence in the late 1970s. Here, each computer acts as a node for file sharing within the formed network. Each node acts as a server, and thus, there is no central server in the network. This allows the sharing of a huge amount of data. In its simplest form, a peer-to-peer (P2P) network is created when two or more PCs are connected and share resources without going through a separate server computer

In P2P (Peer-to-Peer) Architecture, there is no concept of a Central Server.

Each device is free to work as either a client or a server.

- Networks Server/C

IT is a type of Computer Network Architecture in which Nodes can be Servers or Clients. Here, the server node can manage the Client Node Behaviour. Client: is a computer (Host), i.e., capable of receiving information or using a particular service from the service providers (Servers). Servers: are remote computer which provides information (data) or access to particular services

4- Types of computer networks

The Network allows computers to connect and communicate with different computers via any medium. LAN, MAN, and WAN are the three major types of networks designed to operate over the area they cover. There are some similarities and dissimilarities between them. One of the major differences is the geographical area they cover, i. e, LAN covers the smallest area, MAN covers an area larger than LAN, and WAN comprises the largest of all. There are other types of Computer Networks, also, like :

PAN (Personal Area Network) الشخصية الشبكة

SAN (Storage Area Network) التخزين شبكات

EPN (Enterprise Private Network) تاكبشلا ةصاخلا تاسسؤملاب

VPN (Virtual Private Network)الخاصة االفتراضية الشبكات

➢ additional material

This section enriches the lecture with explanations, examples, and practical activities. The original lecture text remains preserved above.

1. Extended introduction: why networking matters in academic life

Computer networking is not only a technical topic reserved for engineers. It is one of the basic conditions that allows students, teachers, researchers, and institutions to communicate, share documents, access digital libraries, use e-learning platforms, and work collaboratively. In a university context, almost every digital activity depends on a network: opening the Moodle platform, sending an email to a teacher, downloading a PDF article, attending a Google Meet session, saving a file on Google Drive, or printing a document through a shared printer. Therefore, understanding the basic vocabulary of networking helps students use digital tools with more confidence and avoid common mistakes.

A network can be understood as a system that connects two or more digital devices so that they can exchange data and share services. The connected devices may be computers, smartphones, tablets, printers, servers, routers, or smart screens. What matters is that these devices are able to communicate according to rules called protocols. These protocols organize the way information is divided, sent, received, checked, and reconstructed.

2. Main components of a computer network

A basic network is composed of several elements. The first element is the end device, also called a host. This may be a computer used by a student, a smartphone, or a server that stores information. The second element is the transmission medium. It may be a physical cable, such as an Ethernet cable or fiber optic cable, or a wireless signal such as Wi-Fi. The third element is the interconnection device, such as a switch, router, modem, or access point. The switch connects devices inside the same local network. The router connects one network to another and usually gives access to the Internet. The modem connects the local network to the Internet service provider.

The access point allows wireless devices to connect to the wired network. Finally, a network also requires software rules and configurations, such as IP addresses, DNS settings, passwords, and security policies. Without these elements, the devices would exist separately and could not exchange information in an organized manner.

3. Wired and wireless networks

Networks may be wired or wireless. A wired network uses cables to connect devices. This type of connection is often stable, fast, and secure. It is useful in offices, computer laboratories, libraries, and administrative services where fixed computers need a reliable connection. A wireless network uses radio signals to connect devices without cables. Wi-Fi is the most common example. Wireless networks are flexible and practical because students and teachers can connect with laptops and phones from different places. However, they may be affected by distance, walls, interference, weak signals, or too many connected users. In university environments, a good network design usually combines both methods.

Administrative offices and computer laboratories may use wired connections, while classrooms, libraries, and common spaces may use wireless access points. Students should understand that a slow connection is not always caused by the computer itself; it may be related to signal quality, network traffic, server overload, or Internet service problems.

4. Local Area Network and university examples

A Local Area Network, usually called LAN, covers a limited area such as a classroom, a department, a library, or an administrative building. In a university department, the computers of the administration can be connected to the same LAN in order to share files, printers, and Internet access. For example, the secretary may prepare a document on one computer and print it on a printer located in

another room. Teachers may access shared files from the department server. Students in a computer room may access the same e-learning platform through the university network. The LAN is important because it allows local services to work even before reaching the wider Internet.

When the LAN is well organized, users can work faster, and the institution can control access rights, protect data, and manage resources. A LAN may be small, with only a few devices, or large, with hundreds of computers distributed across several offices and classrooms.

5. Wide Area Network and the Internet

A Wide Area Network, or WAN, connects networks over large geographical areas. The Internet is the largest example of a WAN because it connects millions of networks around the world. When a student in Algeria opens a scientific article hosted by a university in another country, the request travels through many networks before reaching the destination server. The response then returns through the network path until it appears on the student's screen. This process happens very quickly, but it involves many technical steps. The WAN makes distance less important in access to knowledge. It allows universities to participate in international conferences, use cloud platforms, access digital databases, and collaborate with researchers abroad.

However, WAN access depends on many external factors such as Internet providers, international bandwidth, server availability, and cybersecurity measures.

6. Peer-to-peer and client/server architectures

The two basic architectures presented in the lecture can be clarified through practical examples. In a peer-to-peer network, each computer can share resources directly with another computer. For example, two students working in the same classroom may share files between their laptops without using a central server. This architecture is simple and inexpensive, but it becomes difficult to manage when the number of users increases. It is also less secure because each computer must protect its own data. In a client/server architecture, there is a central machine called a server. The server provides services to many clients. A Moodle platform is a good example: students are clients who connect to the Moodle server to download lectures, submit assignments, answer quizzes, or participate in forums.

This architecture is more organized, easier to manage, and more secure. It is the most common model in universities and professional institutions.

7. IP addresses, DNS, and basic communication

Each device connected to a network needs an address in order to be identified. This address is called an IP address. It works like a digital address that allows data to be sent to the correct device. There are private IP addresses used inside local networks and public IP addresses used on the Internet. Students do not need to memorize complex technical details, but they should understand that a device without a correct IP configuration cannot communicate properly. Another essential service is DNS, or Domain Name System. DNS translates website names into IP addresses. For example, when a user writes a website address in a browser, the computer asks DNS to find the real numerical address of the server.

Without DNS, users would have to remember long numbers instead of simple website names. This is why DNS problems can prevent websites from opening even when the Internet connection seems active.

8. Network security and responsible use

Networking also requires responsible behavior. A network is useful because it allows sharing, but this same sharing can become dangerous if security is ignored. Students should avoid sharing passwords, connecting to unknown networks, downloading suspicious files, or opening links from unknown sources. In a university network, users must respect the institution's rules. They should not try to access private folders, administrative systems, or accounts that do not belong to them. Responsible use of the network also includes respecting bandwidth. Downloading unnecessarily large files or streaming during academic sessions may reduce the quality of the connection for other users.

Security is not only a technical issue; it is also a matter of digital citizenship, ethics, and respect for others.

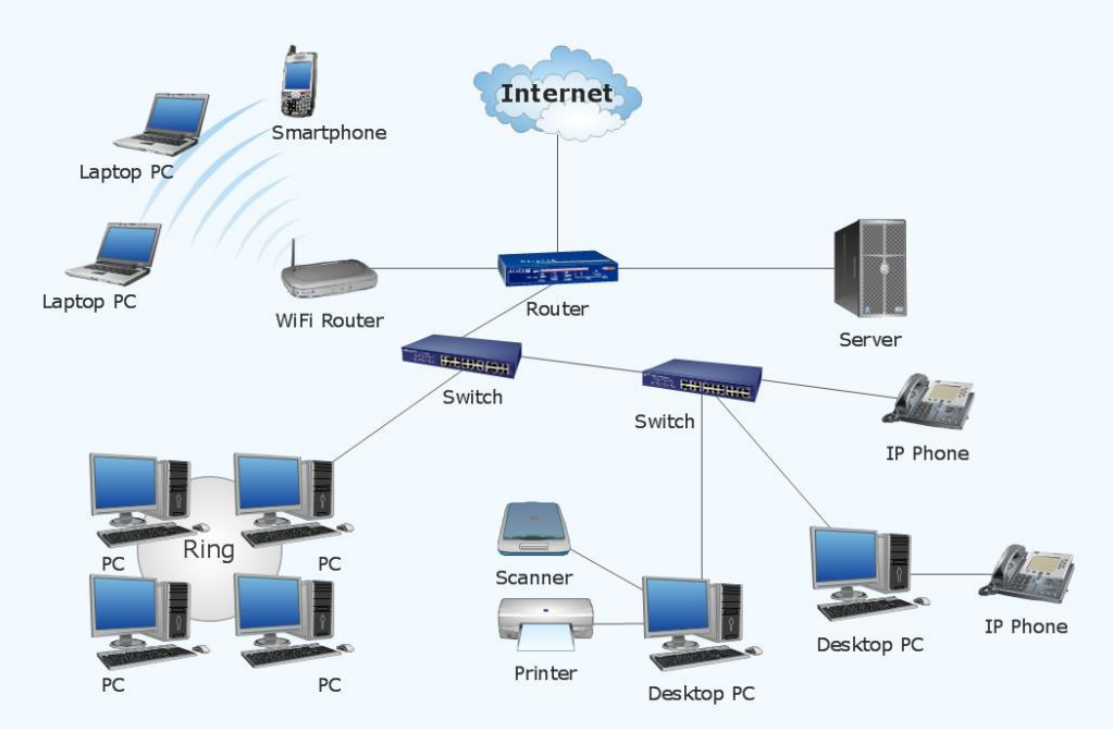
9. Practical activities for students

Activity 1: Ask students to identify the devices that form a network in a computer laboratory: computers, switch, router, printer, cables, and access point.

Activity 2: Ask students to compare the advantages and disadvantages of wired and wireless networks.
Activity 3: Ask students to draw a simple network diagram for a university classroom connected to the Internet.

Activity 4: Ask students to explain, in their own words, the difference between peer-to-peer and client/server architecture.

Activity 5: Ask students to list three safe behaviors when using a public or university Wi-Fi network. These activities help students move from theory to practice and allow them to understand networking as a real part of their academic life.



LECTURE 02: Computer Sciences

1- **Computer sciences (CS)**

Computer science (CS) is the study of computers and computing, including their theoretical and algorithmic foundations, hardware and software, and their uses for processing information.

A computer is defined as an electronic device designed for storing and processing data, typically in binary form. A computer can be described as an electronic device that can receive data, process the data, and produce the result as the outcome.

The computer is a device capable of processing information according to the following steps: - Data entry using input units. - Storing data on storage units - Data processing by the processor - Output of data (i. e., results) using output units

2- **Information:**

is the result of analyzing and interpreting pieces of data. All information is manipulated in binary form (a sequence of 0 and 1, the language of the machine) by the computer. Data is defined as a collection of individual facts or statistics. Data can come in the form of text, observations, figures, images, numbers, graphs, or symbols. -2- is a raw form of knowledge and, on its own, doesn't carry any significance or purpose. Data processing: transformation of input data into outputs by a program

3- **History and Evolution of Computer Systems**

The History of computer systems is about the developments from early, simple devices to aid calculation to modern-day computers. The following are some of the calculating devices that precede modern-day computers: Abacus - Pascal's calculator - The Difference Engine - Mark I ENIAC(Electronic Numerical Integrator And Computer)

4- Central unit. The case of the central unit contains several internal components (the motherboard and its components, the disk drive) and external components (CDs/DVDs, flash disks.

5- The motherboard and its components

A circuit board that allows the CPU to interact with other parts of the computer

The main board on which we find all the necessary components for the operation of a computer, in particular the processor, the central memory, and the expansion slots intended to receive extension cards

The processor (or CPU, for Central Processing Unit) is the brain of the computer. It is an integrated circuit that allows data processing. It is characterized by its speed, which is measured in GHz (Giga hertz), which corresponds to the number of operations per second. One GHz represents one billion operations per second.

ADDITIONAL MATERIAL

This section enriches the lecture with explanations, examples, and practical activities. The original lecture text remains preserved above.

1. Extended introduction to computer sciences

Computer science can be introduced to first-year students as the discipline that studies how information is represented, processed, stored, transmitted, and used by computers and digital systems. It is broader than the simple use of computers. A student may know how to use a word processor or browse the Internet, but computer science asks deeper questions: How does the machine understand data? How are instructions executed? How is information stored in memory? How can software solve problems? How can digital systems support learning, communication, translation, administration, and research? For students in languages and humanities, computer science is important because it gives them the basic culture needed to understand the digital environment in which they study and work.

It also helps them understand e-learning platforms, online dictionaries, translation tools, databases, and artificial intelligence applications.

2. Data, information, and knowledge

The lecture distinguishes between data and information. This distinction is fundamental. Data refers to raw facts, symbols, numbers, words, or observations. For example, a list of marks, a number of absences, a set of search results, or a collection of words can be considered data. Information appears when data is organized and interpreted in a meaningful way. For example, if the marks are arranged in a table and compared with the average mark of the class, they become information. Knowledge goes one step further: it is the ability to use information to understand a situation, make a decision, or solve

a problem. In academic work, students collect data from books, articles, websites, surveys, and interviews.

They transform this data into information by selecting, classifying, summarizing, and analyzing it. They then build knowledge through reflection and argumentation. Computers help in this process because they can store large quantities of data, process it quickly, and present it in different forms.

3. Binary representation and the language of the machine

Computers manipulate information in binary form. This means that the computer represents data using two symbols: 0 and 1. These symbols correspond to electrical states inside the machine. A bit is the smallest unit of information and can have the value 0 or 1. A group of eight bits is called a byte. Text, images, sound, video, and programs are all transformed into binary codes so that the computer can store and process them. For students, this idea may seem abstract, but it can be explained with simple examples. A letter typed on a keyboard is not stored as a visible letter inside the computer; it is represented by a code. An image is not stored as a picture in the physical sense; it is stored as a set of pixels, and each pixel has numerical values.

A sound file is stored as a sequence of numbers that represent changes in sound waves. Understanding binary representation helps students understand why file size, storage capacity, and data transfer speed are important.

4. Hardware and software

A computer system is composed of hardware and software. Hardware refers to the physical parts of the machine: the central unit, screen, keyboard, mouse, motherboard, processor, memory, storage disk, printer, scanner, and other devices. Software refers to the programs and instructions that tell the hardware what to do. Examples include operating systems, browsers, word processors, antivirus programs, media players, and educational platforms. Hardware without software cannot perform useful tasks, and software without hardware cannot run. The operating system is particularly important because it manages the relationship between the user, the applications, and the physical components of the computer.

Windows, Linux, macOS, Android, and iOS are examples of operating systems. For university students, understanding the difference between hardware and software helps them diagnose common problems. For example, a slow computer may be caused by insufficient memory, a full disk, too many programs running at the same time, or malware.

5. Input, processing, storage, and output

The basic functioning of a computer can be described through four stages: input, processing, storage, and output. Input is the action of entering data into the computer. It may be done with a keyboard, mouse, microphone, camera, scanner, or touch screen. Processing is the transformation of data by the processor according to instructions. Storage is the preservation of data in memory or on a storage device such as a hard disk, SSD, USB flash drive, or cloud account. Output is the result produced by the computer, such as text displayed on a screen, a printed document, sound from speakers, or a file saved as a PDF. This model can be applied to many academic tasks.

When a student writes an assignment, the keyboard provides input, the processor manages the text, the document is stored on the disk, and the final result may be displayed, printed, or uploaded to Moodle.

6. The processor, memory, and storage

The processor, or CPU, is often described as the brain of the computer because it executes instructions and controls calculations. Its performance is influenced by speed, number of cores, architecture, and the type of tasks being executed. Memory, or RAM, temporarily stores the data and programs currently in use. More RAM usually allows the computer to work with several applications at the same time. Storage is different from RAM because it keeps files even when the computer is turned off. Traditional hard disks provide large capacity at a lower cost, while SSDs are faster and make the computer start and open programs more quickly. Students should understand this difference because it helps them choose appropriate equipment.

A computer used only for writing and browsing does not require the same specifications as a computer used for video editing, programming, or heavy data processing.

7. Files, folders, and extensions

Digital work requires good file management. A file is a unit of data stored on a device. A folder is used to organize files. File extensions indicate the type of file and the program that can open it. For example, .docx is commonly used for Word documents, .pdf for portable documents, .pptx for presentations, .xlsx for spreadsheets, .jpg and .png for images, and .mp4 for videos. Students should learn to name files clearly and organize them by module, semester, or project. A good file name may include the course title, activity, student name, group, and date. For example: TIC_Assignment1_Group03_Name.docx. Poor organization may lead to lost assignments, wrong uploads, or confusion during exams and projects.

File management is therefore an academic skill, not only a technical habit.

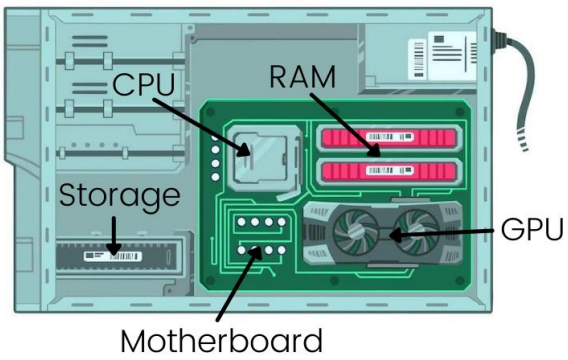
8. Computer sciences and academic skills

Computer science supports many academic skills. In research, students use databases, search engines, digital libraries, citation managers, and online repositories. In writing, they use word processors, grammar tools, formatting styles, and PDF conversion. In communication, they use e-mail, forums, cloud documents, and videoconferencing. In language learning, they use online dictionaries, pronunciation tools, learning applications, and e-learning platforms. In translation, they may use computer-assisted translation tools, terminology databases, and machine translation systems. Understanding basic computer science allows students to become active users rather than passive consumers of technology.

It also prepares them to use artificial intelligence responsibly, because AI tools are based on data, algorithms, software systems, and digital infrastructures.

9. Practical activities for students

Activity 1: Ask students to identify hardware components on a real computer or in a picture. Activity 2: Ask students to classify examples as data, information, or knowledge. Activity 3: Ask students to compare RAM and storage using a simple table. Activity 4: Ask students to create a folder structure for one academic semester and save sample files with clear names. Activity 5: Ask students to convert a Word document into a PDF and explain why a PDF is useful for submission. These activities allow students to connect theoretical notions with daily academic tasks.



LECTURE 03: Internet

1- Internet:

The Internet is a global network that connects computers to each other. It is a network of networks, without a control center, made up of millions of public, private, academic, commercial, and government networks. The Internet allows access to services such as messaging, file transfer, chat, or web browsing using different software, including the web browser.

2- The main uses of the internet

Key Terms Protocol: rules that computers use to exchange data and communicate. World Wide Web: the World Wide Web (www, W3) is an information space where documents and other web resources are identified by unique identifiers which are known as uniform resource locators (or URIs), and can be accessed via the Internet. Website: a location connected to the Internet that maintains one or more pages on the World Wide Web. Classified website: a website where businesses post their advertisement for free. 6 متصفحات الانترنت ا browsers Web A web browser (internet) is software designed to consult (view on a screen) the content of a web page (Internet site), download files, and perform searches. Internet Explorer is the default browser for Windows, but other browsers exist, such as Firefox, Google Chrome, Opera, and Safari, each with its own features.

3- Site URL Uniform resource locator

This is the technical name given to the address of a website. Through this URL, the browser will be able to find the website you are looking for. All Internet addresses are structured as follows:

www. mywebsite. extension

Favorites (or bookmarks)

You can save the addresses of web pages that interest you, so you can easily consult them again.

History: This is the list of sites visited in your browser; it allows you to find a website that you no longer remember, but that you visited before

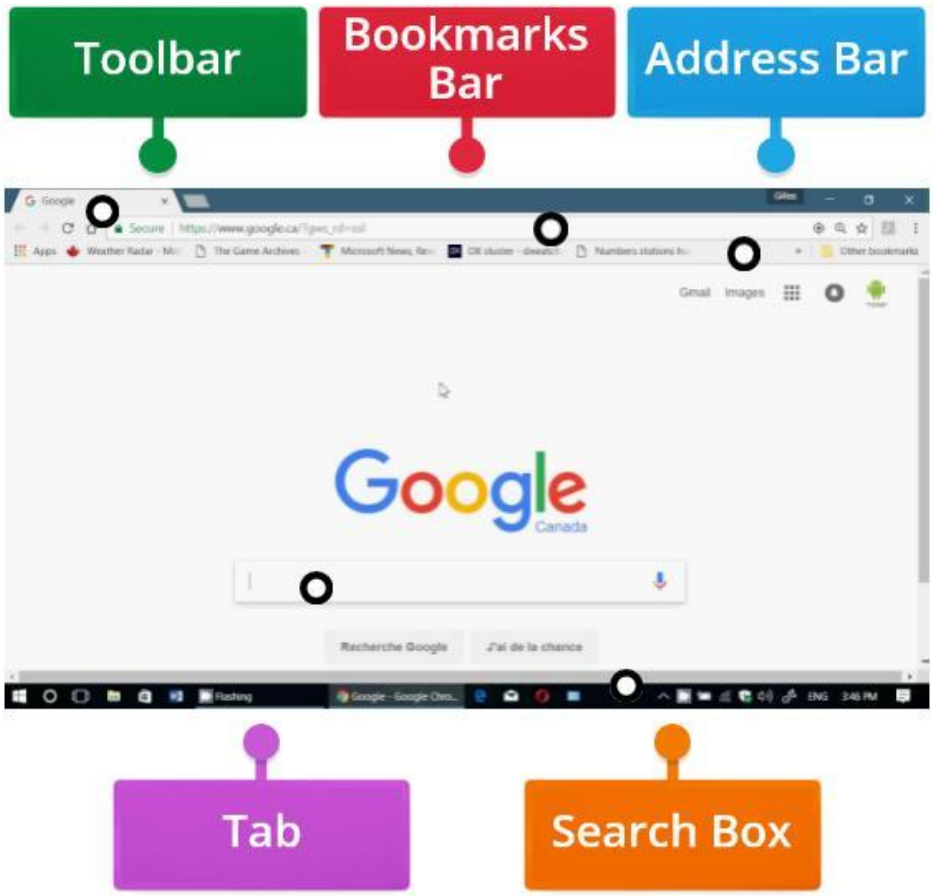
Cookies

A Cookie is a small text file stored on the browser. Cookies can be used to remember information about the user of a site, in order to show them appropriate content in the future.

Modules

A module (or extension) is a small tool that you can add to your browser. As an example, you can add: a module that translates your web pages into English, a module that shows you the definitions of all the words you see, etc.

A web browser window is divided into several parts:



4- Concepts Used in Web Browsers

المفاهيم المستخدمة في متصفحات الإنترنت

1. The Web Page

A web page is the page viewed by the user. It takes up most of the browser window and displays the contents of websites.

صفحة الويب

هي الصفحة التي يشاهدها المستخدم، وتحتل مساحة كبيرة من نافذة المتصفح، وتُعرض من خلالها محتويات المواقع الإلكترونية

2. The Address Bar

The address bar is a horizontal bar where the user can manually enter the URL address of any website in order to access it directly.

شريط العناوين:

هو شريط أفقي يسمح للمستخدم بكتابة عنوان الموقع الإلكتروني يدويًا من أجل الولوج إليه مباشرة.

3. The Tab Bar

The tab bar allows the user to manage several pages at the same time. If the user is browsing one page and wants to open another without closing the first one, they can create a new tab.

شريط التبويب:

هو شريط يسمح بإدارة وتصفح عدة صفحات في الوقت نفسه. فإذا كان المستخدم يتصفح صفحة معينة ويريد فتح صفحة أخرى دون إغلاق الصفحة الأولى، يمكنه إنشاء تبويب جديد.

4. Navigation Buttons

Navigation buttons help the user move between web pages.

The **Back button** is usually represented by a left arrow and allows the user to return to the previous page.

The **Forward button** is usually represented by a right arrow and allows the user to go to the next page after using the Back button.

The **Refresh button** allows the user to reload the current page.

أزرار التنقل:

تساعد أزرار التنقل المستخدم على الانتقال بين صفحات الويب.

زر الرجوع :يكون عادة على شكل سهم نحو اليسار، ويُستخدم للعودة إلى الصفحة السابقة.

زر التقدم :يكون عادة على شكل سهم نحو اليمين، ويُستخدم للانتقال إلى الصفحة التالية بعد استعمال زر الرجوع.

زر التحديث :يُستخدم لإعادة تحميل الصفحة الحالية.

5. The Menu Button

The menu button allows the user to open the browser menu, which contains several options such as tab management, bookmarks, settings, history, downloads, and advanced options.

زر القائمة:

يسمح بفتح قائمة المتصفح التي تحتوي على عدة خيارات، مثل إدارة التبويبات، الإشارات المرجعية، الإعدادات، السجل، التنزيلات، والخيارات المتقدمة.

Search Engines

محركات البحث

A search engine is a website that indexes other websites and allows users to search for resources such as web pages, forums, images, videos, and documents. The search can be done by using a word, a phrase, a question, or keywords.

Google is currently the most widely used search engine in the world. Other search engines include Yahoo and Bing, which is developed by Microsoft. Google can automatically correct spelling mistakes in searches, suggest similar results, and allow users to search in Google Maps or among images.

محركات البحث:

محرك البحث هو موقع إلكتروني يقوم بفهرسة المواقع الإلكترونية الأخرى، ويسمح للمستخدمين بالبحث عن موارد مختلفة، مثل صفحات الويب، المنتديات، الصور، الفيديوهات، والوثائق. ويمكن إجراء البحث باستعمال كلمة، أو عبارة، أو سؤال، أو كلمات مفتاحية.

يُعدّ Google حاليًا من أكثر محركات البحث استخدامًا في العالم. كما توجد محركات بحث أخرى مثل Yahoo و Bingالتابع لشركة Microsoft. يستطيع Google تصحيح الأخطاء الإملائية في عمليات البحث تلقائيًا، واقتراح نتائج مشابهة، كما يسمح بالبحث في Google Mapsأو ضمن الصور.

ADDITIONAL MATERIAL

This section enriches the lecture with explanations, examples, and practical activities. The original lecture text remains preserved above.

1. Extended introduction to the Internet

The Internet is one of the most important infrastructures of contemporary life. It supports communication, education, research, administration, commerce, journalism, entertainment, and public services. In higher education, the Internet gives students access to lectures, scientific articles, dictionaries, e-books, online courses, university platforms, and international academic communities. It also allows teachers to share resources, organize online activities, communicate with students, and

assess learning through digital tools. However, using the Internet effectively requires more than opening a browser. Students need to understand basic concepts such as websites, browsers, search engines, URLs, hyperlinks, downloads, uploads, cookies, privacy, and online credibility.

This lecture, therefore, introduces the Internet as a technical network and as an academic environment.

2. The difference between the Internet and the Web

Many students use the words Internet and Web as if they were identical, but they are not exactly the same. The Internet is the global infrastructure that connects networks and devices. The World Wide Web is one of the services that works through the Internet. The Web allows users to access pages and resources through browsers. E-mail, file transfer, messaging applications, cloud services, and videoconferencing are also Internet services, but they are not all the Web in the strict sense. This distinction is useful because it helps students understand that the Internet is the infrastructure, while websites and web pages are only one way to use it.

When a student sends an email, attends a Google Meet session, or uploads a file to Moodle, different Internet services may be involved.

3. Websites, web pages, and hyperlinks

A website is a set of related web pages located under a domain name. A web page is a single document displayed in a browser. For example, a university may have a website with several pages: home page, faculty page, department page, news page, library page, and e-learning page. Hyperlinks connect web pages to one another. A hyperlink may lead to another section of the same page, another page on the same website, a downloadable document, an external website, or a video. Students should pay attention to hyperlinks because they help navigation, but they may also lead to unreliable or dangerous websites. Before clicking on a link, especially in emails or social networks, it is better to check its source and purpose.

Responsible navigation is an important part of digital literacy.

4. URLs and domain names

A URL, or Uniform Resource Locator, is the address used to locate a resource on the Web. It usually contains several parts: the protocol, the domain name, and sometimes a path to a specific page or file. For example, in a typical web address, https indicates the protocol, the domain name identifies the website, and the remaining part may indicate a page, folder, or document. Domain extensions may

provide clues about the nature of a website. For example, .edu is often associated with educational institutions, .gov with government services, .org with organizations, and .com with commercial sites. However, students should not rely only on the extension to judge credibility.

A professional-looking address does not automatically guarantee that the content is accurate. Evaluation requires checking the author, date, source, references, and purpose of the website.

5. Web browsers and their functions

A web browser is software that allows users to access and display web pages. Common browsers include Google Chrome, Mozilla Firefox, Microsoft Edge, Safari, and Opera. A browser contains several important elements: the address bar, tabs, navigation buttons, bookmarks, history, download manager, extensions, and privacy settings. The address bar allows users to type a URL or search keywords. Tabs allow several pages to be opened at the same time. Bookmarks save useful websites for later use. History keeps a record of visited pages. Extensions add functions such as translation, note-taking, ad blocking, or citation management. Students should learn to use browsers efficiently because a large part of academic work depends on online navigation and information retrieval.

6. Search engines and academic search strategies

Search engines help users find information on the Web by indexing web pages and ranking results according to relevance and other criteria. Google is the most widely used search engine, but students can also use specialized academic tools such as Google Scholar, university databases, online catalogues, and digital libraries. Academic searching requires careful strategies. Students should use precise keywords, quotation marks for exact expressions, and operators such as AND, OR, and NOT when appropriate. They should also compare several sources instead of relying on the first result. A search result is not automatically a reliable source. Paid results, blogs, personal opinions, outdated pages, and unattributed content may appear near reliable academic resources.

Therefore, search skills are essential for university success.

7. Downloads, uploads, and cloud services

Downloading means transferring a file from the Internet to the user’s device. Uploading means transferring a file from the user’s device to an online platform or server. Students download lectures, articles, images, forms, and software. They upload assignments, scanned documents, presentations, or exam answers. Cloud services such as Google Drive, OneDrive, and Dropbox allow users to store files

online and access them from different devices. These services are useful, but students should manage them carefully. Files must be named clearly, organized in folders, and protected with secure passwords. Sensitive documents should not be shared publicly.

Before submitting an assignment, students should verify that the uploaded file is the correct version and that it opens properly.

8. Internet credibility and information evaluation

One of the greatest challenges of Internet use is evaluating credibility. The Internet contains valuable knowledge, but it also contains misinformation, outdated information, advertising, manipulation, and incomplete content. Students should ask several questions before using an online source in academic work: Who is the author? What institution publishes the information? Is the date recent? Are references provided? Is the language objective or emotional? Is the purpose educational, commercial, political, or promotional? Can the information be verified through other reliable sources? These questions help students avoid copying weak or unreliable content.

Digital literacy means not only finding information quickly, but also selecting, evaluating, and using it ethically.

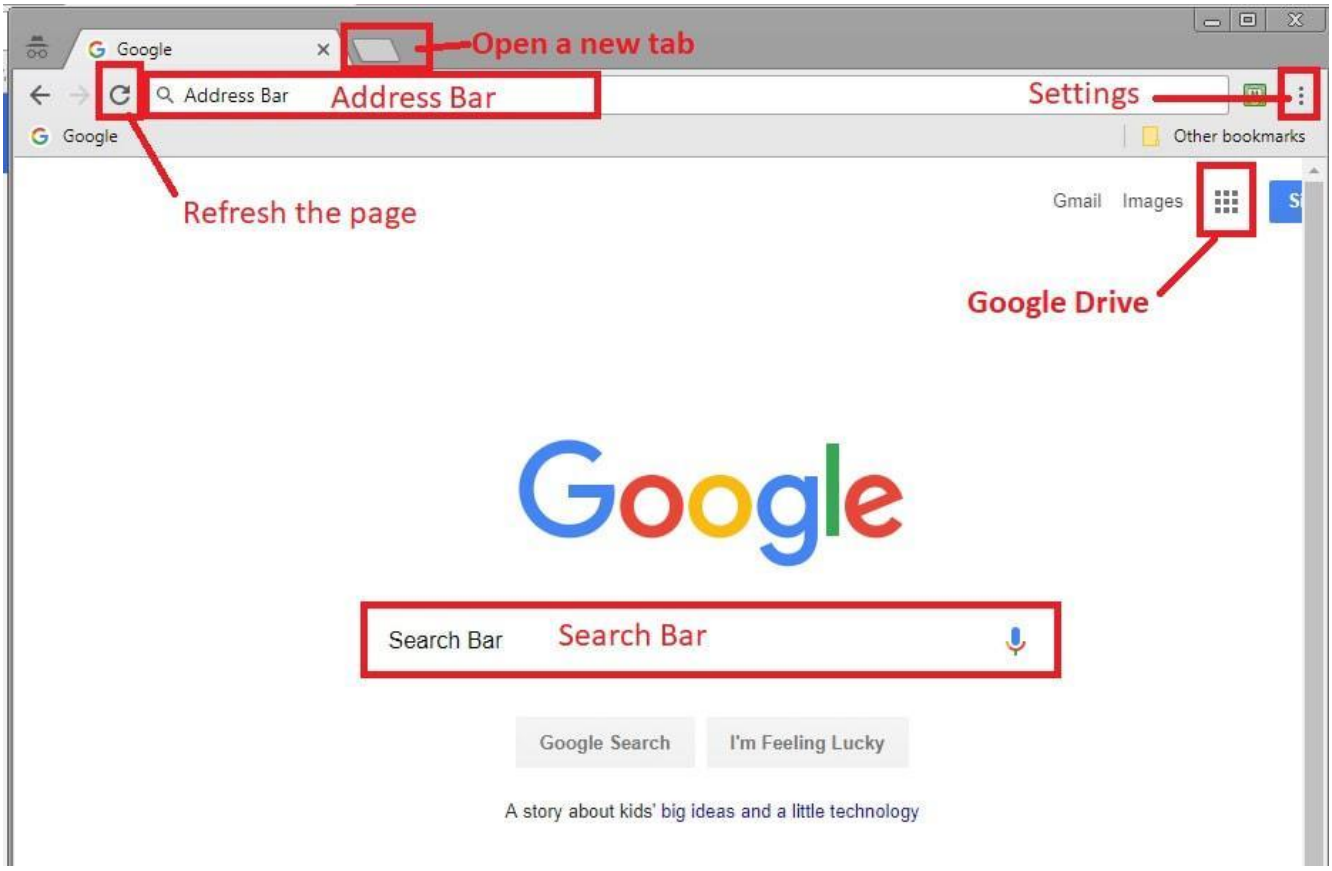
9. Privacy, cookies, and digital traces

When using the Internet, users leave digital traces. Websites may collect information through cookies, forms, accounts, searches, location settings, and browsing behavior. Cookies can be useful because they remember preferences and keep users logged in, but they may also be used for tracking and advertising. Students should understand that online privacy requires active choices. They should use strong passwords, avoid saving passwords on shared computers, log out of university computers, review privacy settings, and avoid sharing personal information unnecessarily. Public computers and public Wi-Fi networks require special caution. Digital responsibility includes protecting one’s own data and respecting the privacy of others.

10. Practical activities for students

- Activity 1: Ask students to identify the parts of a URL and explain their meaning.
- Activity 2: Ask students to compare a general Google search with an academic search on Google Scholar.

- Activity 3: Ask students to evaluate two websites on the same topic and decide which one is more reliable.
- Activity 4: Ask students to create a bookmark folder for academic websites.
- Activity 5: Ask students to download a PDF article, rename it correctly, save it in a folder, and upload it to a learning platform. These activities transform Internet use from simple browsing into structured academic practice.



LECTURE 04: E-mailing

This chapter introduces students to the technical, practical, communicational, and security dimensions of e-mailing. It includes illustrated steps, classroom activities, evaluation questions, and DOI-based academic references.

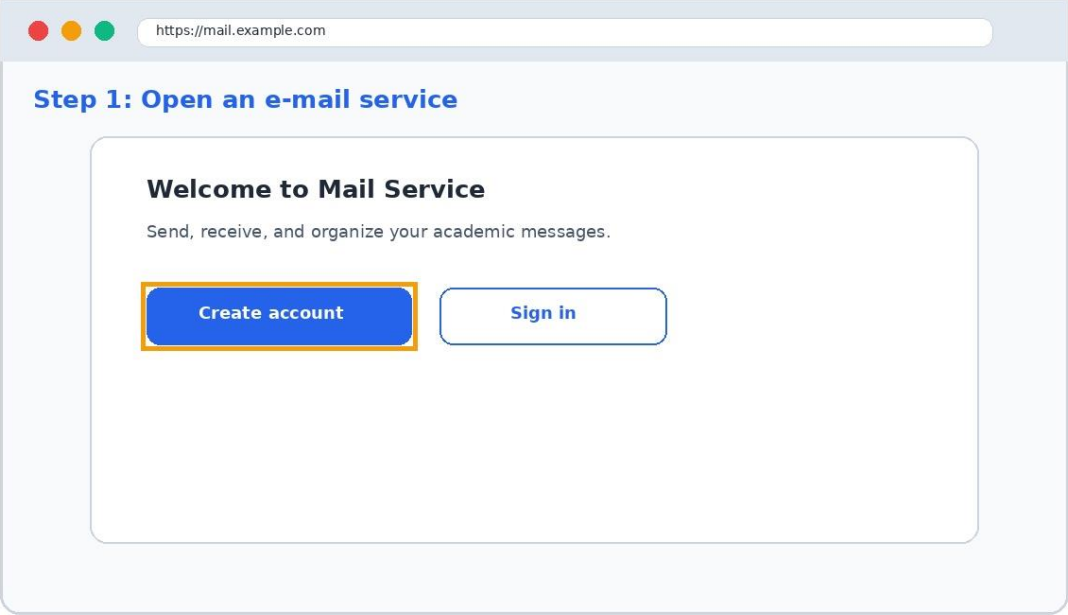


Figure 1. Opening an e-mail service and creating an account.

1- Introduction

Electronic mail, commonly known as e-mail, is one of the most widely used services in digital communication. Although many users today also communicate through instant messaging applications and social networks, e-mail remains essential in formal, academic, administrative, and professional contexts. Universities use it to send official announcements, teachers use it to share learning resources, and students use it to ask questions, submit documents, and receive important information.

E-mail is not only a technical tool. It is also a communication practice that requires clarity, politeness, organization, and security awareness. A student may know how to press the Send button, but this is not enough. Effective e-mailing requires the ability to choose a clear subject line, write a respectful message, attach the correct file, protect personal information, and manage the mailbox efficiently.

At the technical level, Internet e-mail depends on standardized formats and protocols. RFC 5322 defines the Internet Message Format, while RFC 5321 specifies the Simple Mail Transfer Protocol

used for the transmission of electronic mail. MIME also expanded e-mail by allowing different content types and attachments beyond plain text

This lecture, therefore, combines technical understanding with practical use. It explains the definition of e-mail, basic concepts, components of an e-mail address, account creation, reading received messages, writing and sending e-mails, attachments, message management, and security rules.

1. Definition of E-mail

E-mail is the abbreviation of electronic mail. It is a digital communication service that enables users to send and receive messages through the Internet. Unlike traditional mail, which depends on paper, envelopes, postal offices, and physical delivery, e-mail depends on electronic devices, networks, mail servers, and unique electronic addresses.

An e-mail message can contain written text, links, images, documents, presentations, compressed files, and other types of digital content. It may be sent from one person to another, from one person to a group, or from an institution to a large number of users at the same time. This flexibility explains why e-mail continues to be used in education, administration, business, research, and public services.

In academic terms, e-mail can be defined as a digital communication service that enables the exchange of written messages and digital files through networked mail systems using unique electronic addresses. This definition highlights four central elements: digital communication, message exchange, file transfer, and address-based identification.

E-mail is important because it creates a written record of communication. Unlike oral communication, which may be forgotten or misunderstood, e-mail messages can be saved, searched, archived, printed, or forwarded. This makes email especially useful for official communication, administrative procedures, learning instructions, project supervision, and professional correspondence.

1.1 Advantages of E-mail

- Speed: messages are usually delivered within seconds or minutes.
- Low cost: users can send messages without printing or postal fees.
- Documentation: messages remain stored and can be used as evidence of communication.
- Flexibility: users can send text, links, images, and documents.
- Professional use: e-mail is widely accepted in universities, companies, and administrations.
- Asynchronous communication: the sender and recipient do not need to be connected at the same time.

However, these advantages require responsible use. Users must avoid unclear messages, unofficial language, suspicious attachments, weak passwords, and the careless sharing of private information.

2. Basic Concepts Related to E-mail

To use e-mail correctly, students must understand the basic concepts that appear in most services, such as Gmail, Outlook, Yahoo Mail, and institutional university e-mail systems. These concepts help users receive, organize, search, protect, and send messages efficiently.

Mailbox

The mailbox is the digital space where the user receives, stores, organizes, and manages e-mail messages. It is comparable to a physical mailbox, but it exists online and is connected to the user's e-mail address.

Inbox

The Inbox is the folder where received messages usually appear. Students should check their Inbox regularly because official university information, course materials, exam announcements, and administrative deadlines may be sent by email.

Sent Folder

The Sent folder contains messages that the user has already sent. It is useful for verifying whether a message was sent and for keeping a record of academic or administrative exchanges.

Drafts

A draft is a message that has been written but not yet sent. Most e-mail services save drafts automatically, which allows users to complete important messages later.

Spam or Junk Mail

Spam refers to unwanted, suspicious, or promotional messages. Some spam messages may include fake offers, dangerous links, or attempts to steal personal information.

Trash

The Trash folder contains deleted messages. Deleted messages may remain there for a limited time before permanent deletion.

Archive

The Archive option removes messages from the Inbox without deleting them. Archived messages can still be found later using the search function.

Contact List

A contact list saves e-mail addresses and makes it easier to send messages to teachers, classmates, offices, and professional contacts.

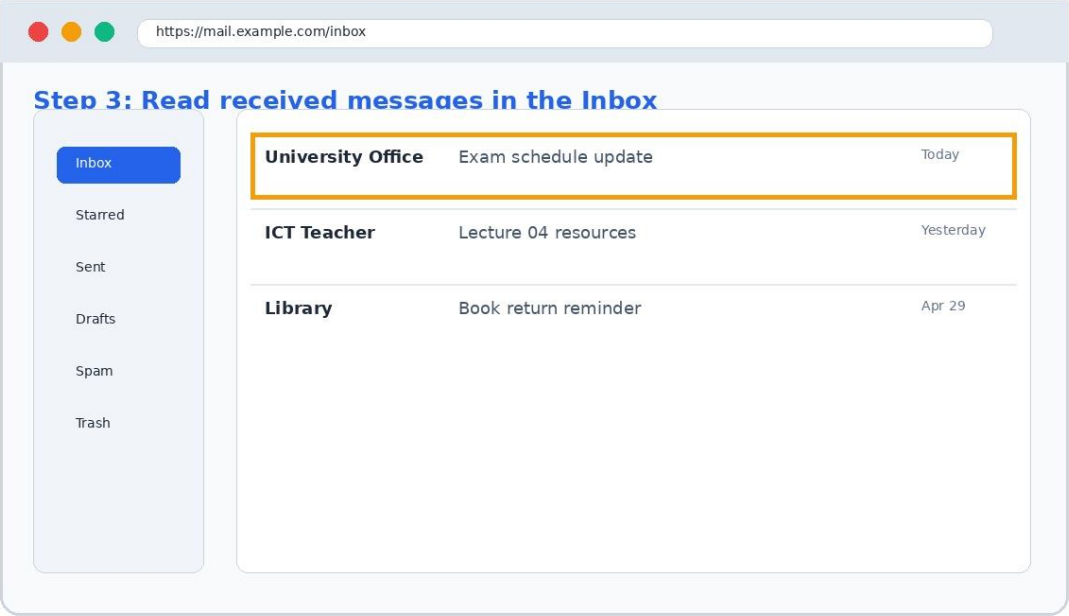


Figure 2. Example of an Inbox showing received messages.

2.1 Recipient Fields: To, CC, and BCC

The To field is used for the main recipient of the message. If a student is sending an assignment to a teacher, the teacher's address should be written in the To field.

CC means Carbon Copy. It is used when another person should receive a visible copy of the message. For example, a student may send a request to a teacher and put the department office in CC if the office needs to be informed.

BCC means Blind Carbon Copy. It allows the sender to send a copy to someone without showing that address to other recipients. This option is useful when sending a message to many people while protecting their privacy.

2.2 Reply, Reply All, and Forward

Reply sends the answer only to the sender. Reply All sends the answer to the sender and all visible recipients of the original message. Forward sends a received message to another person. Reply All and Forward should be used carefully because they may share information with people who do not need it or should not receive it.

3. Components of an E-mail Address

An e-mail address is a unique digital identifier that allows a user to send and receive messages. It normally has the following structure: username@domain.com. For example, in the address student2026@gmail.com, the username is student2026, and the domain is gmail.com.

The username appears before the @ symbol and identifies the user or mailbox. The @ symbol is read as at and separates the username from the domain name. The domain name appears after the @ symbol and identifies the organization or service that hosts the mailbox.

Professional and academic communication requires serious email addresses. A university student should preferably use a clear address based on their real name, such as firstname.lastname@email.com. Informal addresses may create a negative impression when communicating with teachers, administrations, or future employers.

3.1 Examples of E-mail Address Types

Type	**Example**	**Use**
Personal	name@gmail.com	Private communication
Academic	student@university.dz	University learning and administration
Professional	employee@company.com	Workplace communication
Administrative	incubator@univ-setif2.dz	Official office communication

4. Creating an E-mail Account

An email account is a personal digital space that allows the user to send, receive, store, and manage messages. To create an account, the user registers with an email provider such as Gmail, Outlook, Yahoo Mail, or an institutional university mail system.

Although the interface changes from one service to another, the general process is usually similar. The user chooses a service, opens the registration page, enters personal information, selects a username, creates a strong password, confirms the account, and adds recovery information.

4.1 Main Steps for Creating an Account

1. Choose a reliable e-mail service or institutional platform.
2. Click on Create account or Sign up.
3. Enter the required personal information carefully.
4. Choose a serious and professional username.
5. Create a strong password that is difficult to guess.
6. Confirm the account using a phone number or recovery e-mail when requested.
7. Accept the service terms after reading the main conditions.
8. Add recovery options to regain access if the password is forgotten.

4.2 Strong Passwords and Account Recovery

A password protects the e-mail account from unauthorized access. If another person obtains the password, they may read private messages, send false messages, delete documents, or reset other accounts connected to the e-mail address.

A strong password should include uppercase letters, lowercase letters, numbers, and symbols. It should not be based on the user’s name, date of birth, phone number, or simple sequences such as 123456. Users should also avoid using the same password for all accounts.

Recovery options are important because they help the user regain access to the account when the password is forgotten. A recovery phone number or recovery e-mail address should be kept updated.

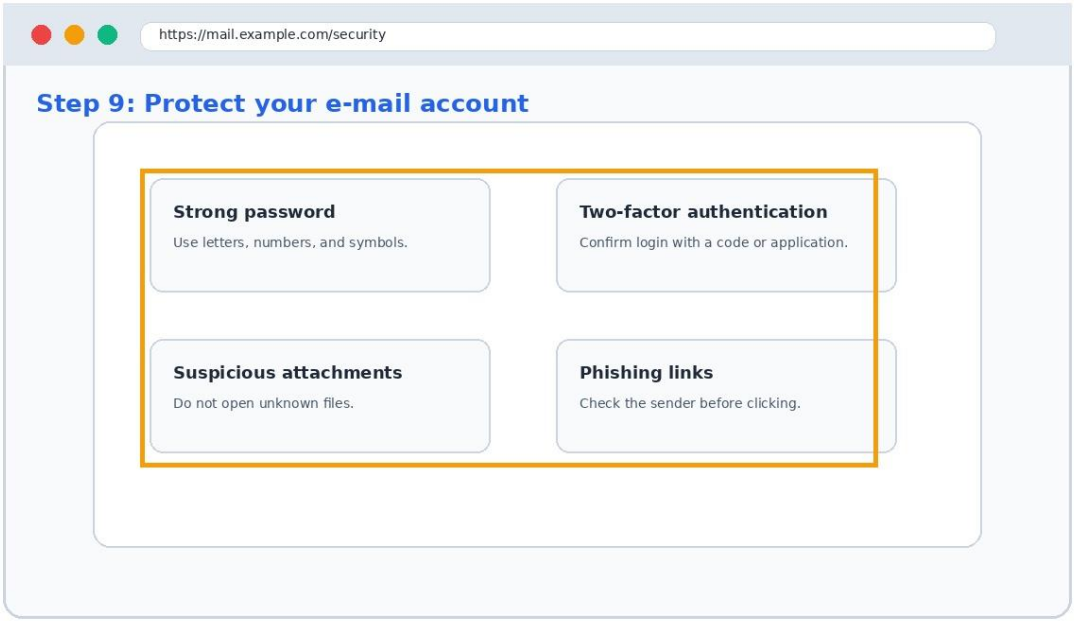


Figure 4. Main rules for protecting an email account.

5. Reading Received Messages

To read received messages, the user opens the e-mail account and goes to the Inbox. The list of messages usually shows the sender, subject line, date, a short preview, and sometimes an icon indicating that an attachment is included.

Before responding to any message, the user should examine the message header. The header usually includes From, To, CC, Subject, and Date. These details help the recipient understand who sent the message, why it was sent, and whether it requires immediate action.

The message body contains the main text. A careful reader should identify the purpose of the message, the required action, the deadline, the attached files, and any link or instruction. This is particularly important in academic communication because exam dates, assignment deadlines, and administrative instructions may be communicated by e-mail.

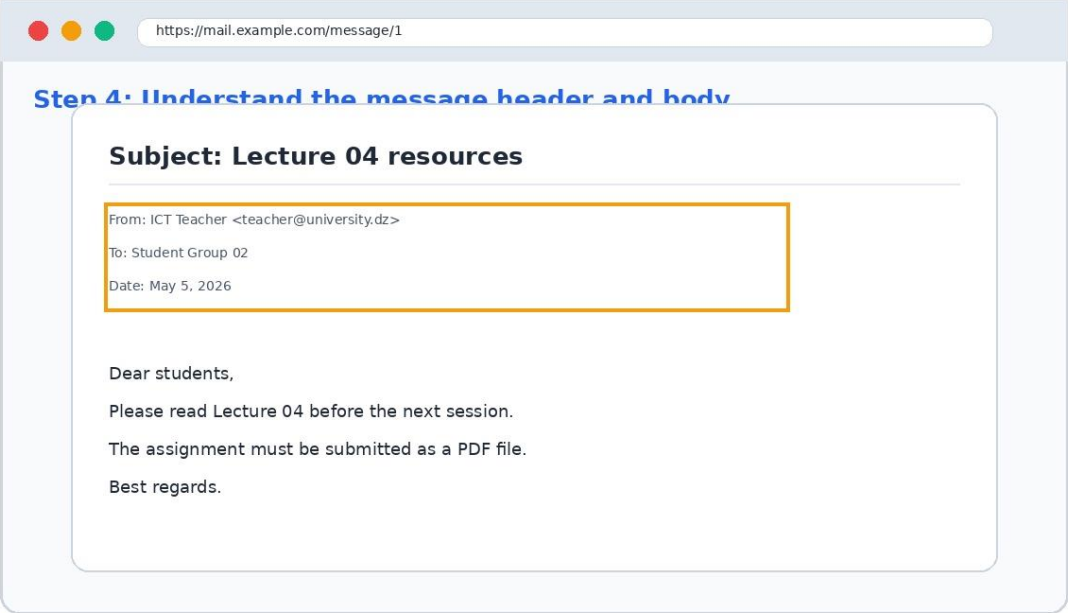


Figure 5. Reading the header and body of a received message.

5.1 Responding to Received Messages

When replying to an e-mail, students should use polite language, answer the question clearly, avoid unnecessary details, and sign the message with their full name and group. A professional reply may be short, but it must be respectful and complete.

Example:

Dear Professor,

Thank you for your message. I confirm that I have received the instructions concerning the assignment. I will submit the work before the deadline.

Best regards,
Full Name
Group 02

6. Writing and Sending an E-mail

Writing an effective e-mail means organizing information in a clear and respectful way. A professional e-mail normally includes the recipient address, a clear subject line, a greeting, a short introduction, the main message, a closing phrase, and a signature.

The subject line is very important because it tells the recipient what the message is about before opening it. A weak subject line such as Hello or Important is not precise. A better subject line would be Question about Lecture 04, Submission of Assignment 02, or Request for Absence Justification.

The message body should be concise and well structured. The student should introduce themselves when necessary, explain the reason for writing, ask the question or present the request clearly, and finish with a polite closing phrase.

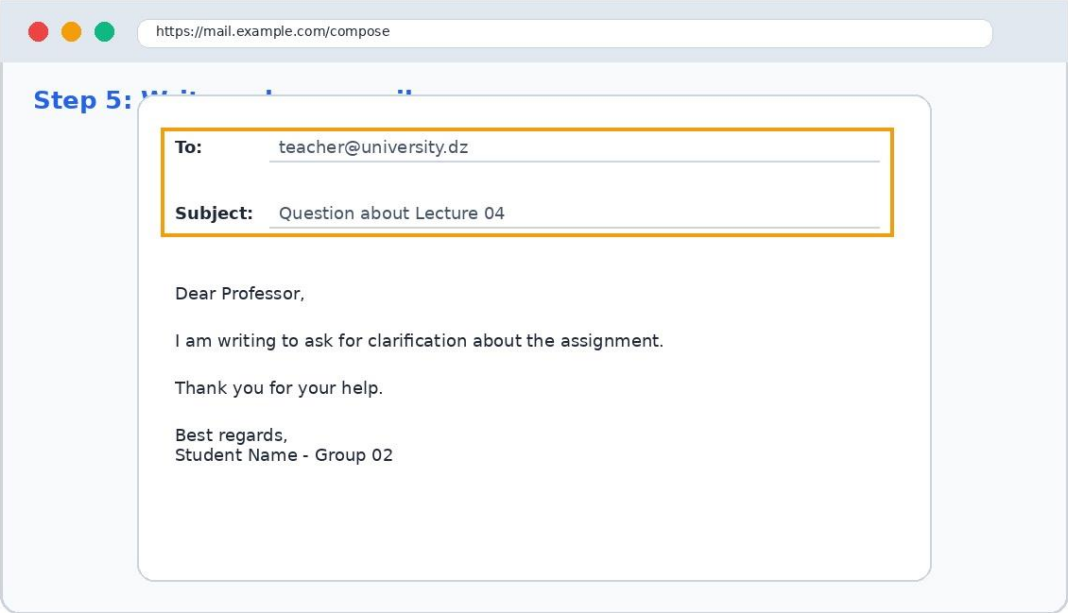


Figure 6. Writing a clear e-mail with recipient, subject, greeting, body, and signature.

6.1 Checklist Before Sending

- The recipient address is correct.
- The subject line is clear and precise.
- The greeting is polite.
- The message is understandable and respectful.
- There are no major spelling mistakes.
- The attachment is included if it is mentioned in the message.
- The file name is clear.
- The signature contains the sender's full name and group.

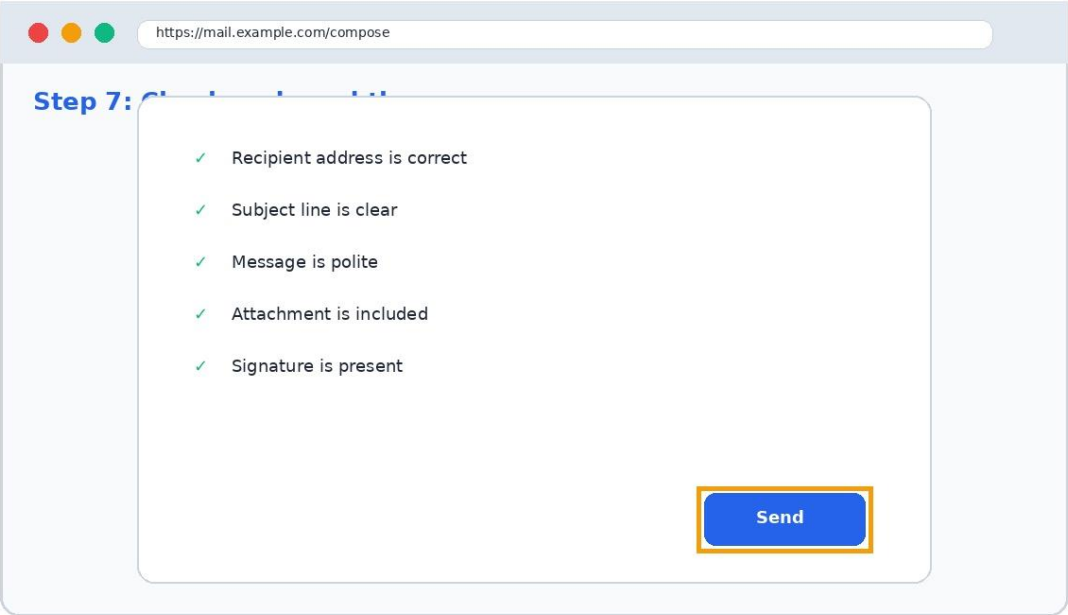


Figure 7. Checking the e-mail before clicking Send.

6.2 Example of a Professional Student E-mail

Subject: Request for Clarification about ICT Assignment

Dear Professor,

I hope you are doing well. My name is Lina Mansouri, a first-year student in Group 04. I am writing to ask for clarification concerning the ICT assignment announced during the last lecture.

Could you please confirm whether the assignment should be submitted as a Word document or as a PDF file?

Thank you for your time and support.

Best regards,
Lina Mansouri
Group 04

7. Attachments and Message Management

An attachment is a file added to an e-mail message. Attachments may include Word documents, PDF files, PowerPoint presentations, Excel spreadsheets, images, compressed folders, audio files, or videos. The ability to carry different types of content is historically linked to MIME, which extended the format of e-mail messages beyond plain text (Freed & Borenstein, 1996).

To attach a file, the user usually clicks on the paperclip icon, selects the file from the device, waits until the upload finishes, and verifies that the file appears in the message before sending. It is a common mistake to write Please find attached and then forget to attach the file.

Files should be named clearly before being attached. For example, ICT_Assignment_Group02_Ahmed_Benali.pdf is better than document1.pdf or finalfinal.docx. Clear file names help teachers and administrations identify documents quickly.

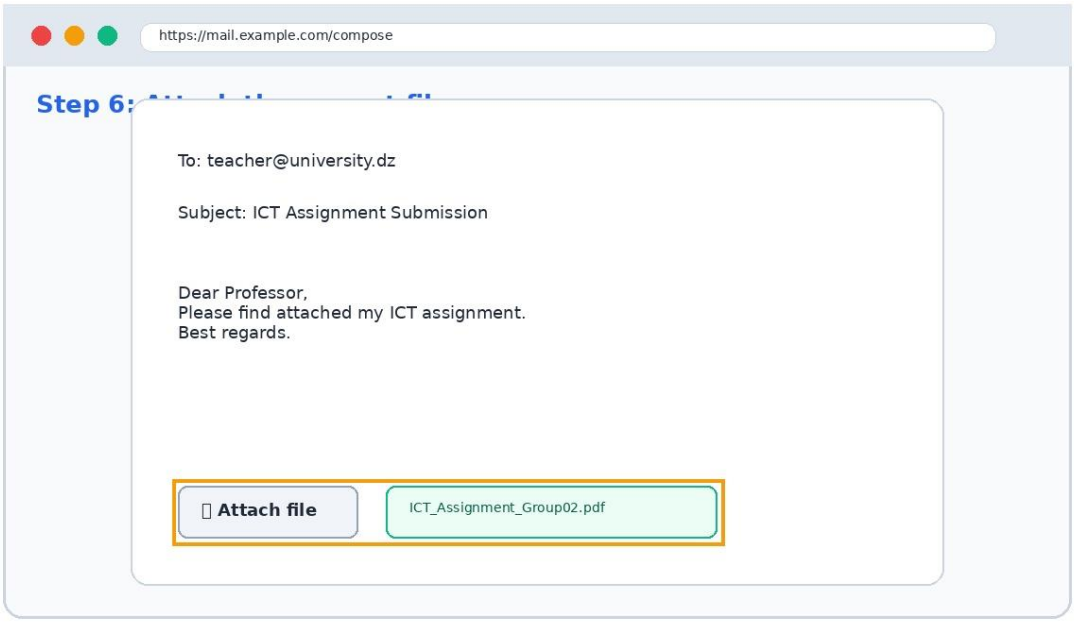


Figure 8. Attaching the correct file before sending an e-mail.

7.1 Managing Messages

A mailbox can quickly become crowded. Good message management helps the user find important information, avoid missed deadlines, and reduce confusion. Users can create folders such as University, Assignments, Exams, Administration, and Personal Documents.

Labels, folders, search, archive, and stars help users organize messages. Unnecessary messages should be deleted, but official messages should be archived rather than removed immediately. Search tools can locate messages by sender, date, subject, keyword, or attachment.

E-mail overload occurs when a user receives or keeps so many messages that important information becomes difficult to manage. Research has shown that e-mail overload can create personal information management problems, including cluttered inboxes and lost messages (Whittaker & Sidner, 1996).

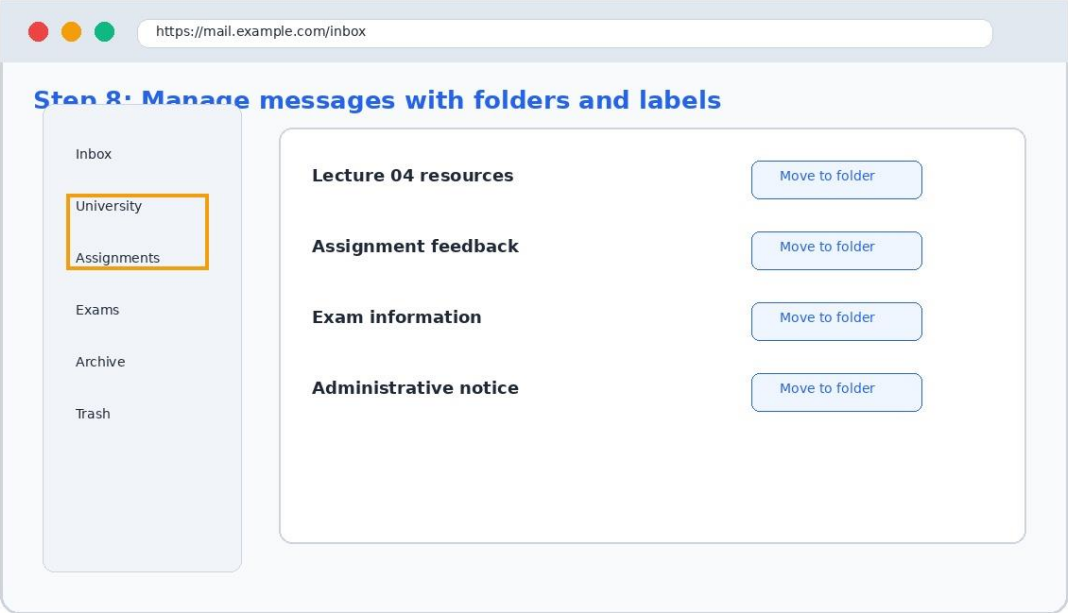


Figure 9. Organizing messages with folders and labels.

7.2 Security Rules for Attachments and Links

- Do not open attachments from unknown or suspicious senders.
- Do not click links that ask for passwords or personal information.
- Check the sender's address carefully.
- Be careful with urgent messages that create fear or pressure.
- Avoid downloading executable files from unknown sources.
- Enable two-factor authentication when available.
- Report suspicious messages or ask a trusted person before responding.

Phishing e-mails often try to persuade users to click links or open malicious attachments. Research on phishing in the workplace shows that e-mail remains a major path for attacks because users may be encouraged to click harmful links or attachments

Conclusion

E-mailing is a fundamental skill in digital life. It allows users to communicate quickly, formally, and efficiently. In the university context, e-mail connects students with teachers, departments, administrations, classmates, and professional opportunities.

This lecture explained the definition of e-mail, the basic concepts related to e-mail, the structure of an e-mail address, the steps for creating an e-mail account, the method for reading received messages, the rules for writing and sending professional messages, and the use of attachments and message management tools.

A competent e-mail user is not only a person who can send a message. A competent user writes clearly, chooses an accurate subject line, attaches files correctly, protects personal information, avoids suspicious messages, and organizes the mailbox. E-mailing is, therefore, both a technical skill and a communication skill.

- **Practical Activities**

Activity 01: Identify the Components of an E-mail Address

Analyze the address amina.bekkar@univ-setif2.dz. Identify the username, the @ symbol, the domain name, and the type of address.

Activity 02: Write a Professional E-mail

Write an email to your teacher asking for clarification about an assignment submission date. Your e-mail must include a subject line, greeting, short introduction, clear request, closing phrase, and signature.

Activity 03: Attachment Practice

Prepare a file named ICT_Assignment_Group_Number_FullName.pdf and write a short e-mail to submit it correctly.

- **Evaluation Questions**

9. Define e-mail and explain its importance in academic communication.
10. What are the main components of an e-mail address?
11. Explain the difference between Inbox, Sent, Drafts, Spam, Trash, and Archive.
12. What is the role of the subject line in an e-mail?

13. Explain the difference between To, CC, and BCC.
14. Give five rules for writing a professional e-mail.
15. What is an attachment? Give three examples of attached file types.
16. Mention four safety rules when opening e-mail attachments.
17. What is e-mail overload? How can users avoid it?
18. Write a short professional e-mail to your university administration asking for information about your student card.

LECTURE 05: Tips for Surfing the Internet Safely

1. Basic rules of Internet safety

Internet safety means using digital services in a careful and responsible way in order to reduce risks such as malware infection, identity theft, account hacking, data loss, phishing, and privacy violations. Safe Internet use is not limited to technical tools; it also depends on user behavior. A secure device can still be exposed to danger if the user clicks suspicious links, downloads unknown files, or shares passwords carelessly.

The basics of safe browsing can be summarized in four principles: protection, attention, verification, and prevention. Protection means using security tools such as antivirus software and secure passwords. Attention means being careful with websites, links, messages, and pop-ups. Verification means checking the source before downloading or sharing information. Prevention means preparing for problems before they happen, for example by backing up important data.

- Do not click on suspicious links, especially when they arrive through unknown e-mails, messages, or social media posts.
- Do not share personal information, student information, passwords, or banking data on websites that are not trusted.
- Check the website address before entering your credentials. A fake page may look similar to a real service.
- Use secure websites when possible. A secure website usually begins with https:// and shows a lock icon in the browser.
- Close pop-ups that promise prizes, free gifts, cracked programs, or urgent alerts that look exaggerated.
- Log out from your accounts when using a shared or public computer.

A good digital user should develop the habit of pausing before clicking. Many online attacks succeed because the user reacts quickly to fear, curiosity, or urgency. For example, a fake message may say that an account will be closed immediately unless the user enters a password. In such cases, the safest behavior is to open the official website directly instead of clicking the link in the message.

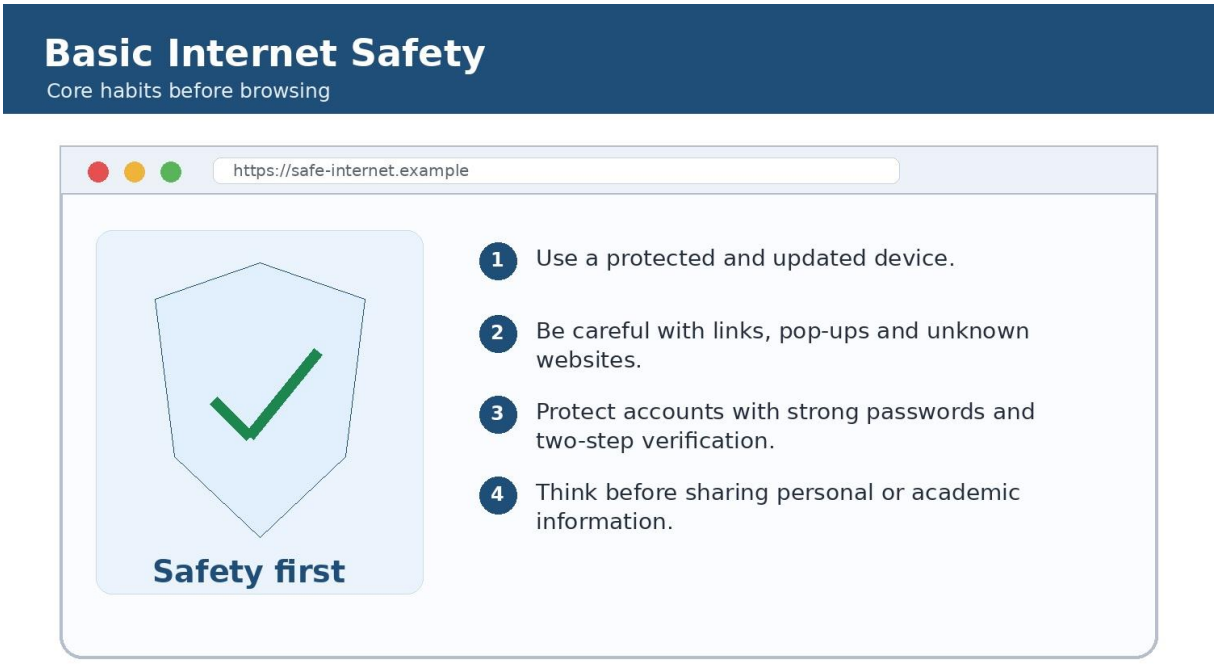


Figure 2. Basic safe browsing habits: protect, verify, and think before clicking.

2. Protecting the computer

The computer, smartphone, or tablet used for Internet access must be protected because it stores personal files, login sessions, browser history, academic documents, and sometimes payment information. One of the most common protective tools is antivirus or endpoint security software. Its role is to detect, block, quarantine, or remove malicious programs such as viruses, spyware, ransomware, and Trojan horses.

A virus is a malicious program that can copy itself and damage files or systems. Spyware may secretly collect information about the user. Ransomware may lock files and demand payment for recovery. A Trojan may appear as a normal program but hides harmful behavior. Because threats can arrive through downloads, external files, e-mail attachments, fake websites, or USB keys, regular protection is necessary.

Antivirus protection should not be installed and forgotten. It must remain active and updated. Security tools rely on detection databases and behavior analysis. If the software is old, it may fail to recognize new threats. Regular scans also help detect files that were downloaded earlier or copied from external devices.

Recommended practices for protecting the computer include:

- Install a trusted antivirus or security solution and keep it active.
- Perform quick scans regularly and full scans from time to time.
- Do not disable security protection just to install a suspicious program.
- Pay attention to security warnings from the operating system or browser.
- Avoid using unknown USB drives without scanning them first.
- Do not allow unknown applications to make changes to the device.

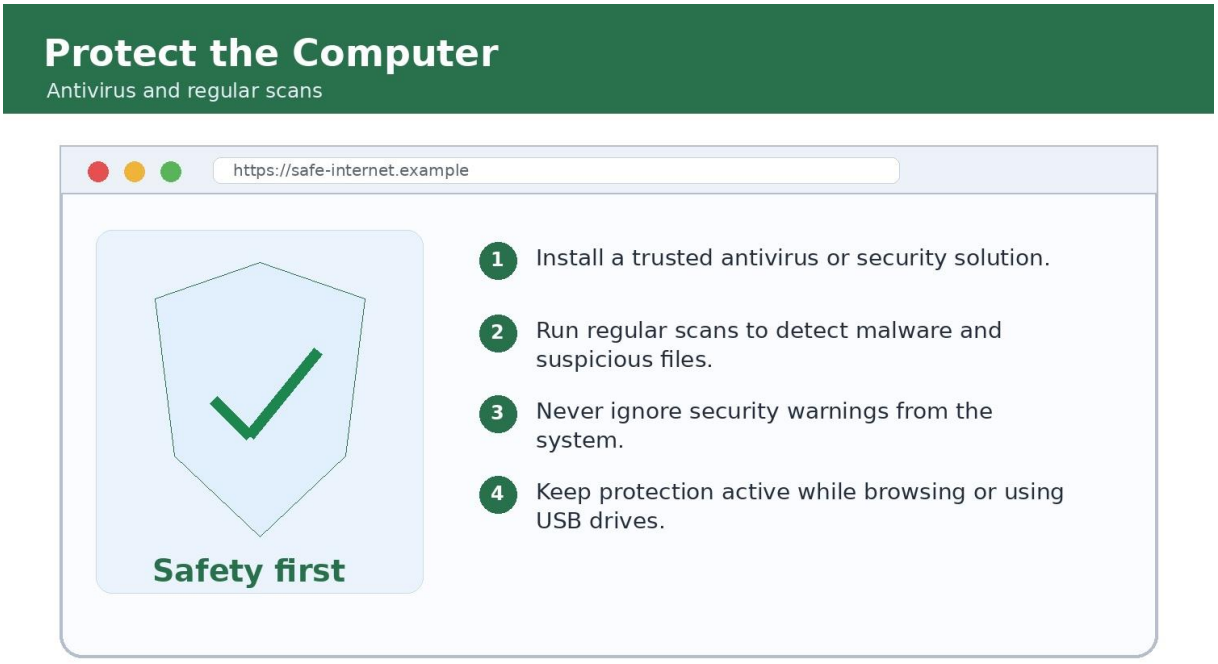


Figure 3. Antivirus protection and regular scans help reduce malware risks.

3. Software updates and data backup

Software updates are an essential part of cybersecurity. They do not only add new functions; they also correct errors and security weaknesses. Attackers often exploit old versions of operating systems, browsers, PDF readers, office tools, and communication applications. For this reason, users should activate automatic updates whenever possible.

The operating system is especially important because it controls the main functions of the device. If the operating system is no longer supported, it may no longer receive security updates. This creates a serious risk because new vulnerabilities can remain open. Therefore, users should use supported systems and update them regularly.

Browsers must also be updated because they are the main gateway to websites. An outdated browser may fail to block unsafe websites or may contain weaknesses that attackers can exploit. The same rule applies to applications such as Microsoft Office, PDF readers, compression tools, and media players.

Data backup is the second pillar of protection. A backup is a copy of important data stored in another location. If the original files are lost because of device failure, accidental deletion, ransomware, theft, or corruption, the backup can help recover them.

Common backup locations include external hard drives, USB drives, and cloud services such as Google Drive, OneDrive, and Dropbox. However, backups should be organized and tested. A backup that cannot be opened or is never updated may not be useful when needed.

A practical backup strategy for students:

– Create one folder for important academic files.
– Copy this folder regularly to an external drive.
– Keep another copy in a trusted cloud service if available.
– Use clear names for folders and dates, such as “ICT_Backup_May_2026”.
– Check from time to time that the backup files can be opened.

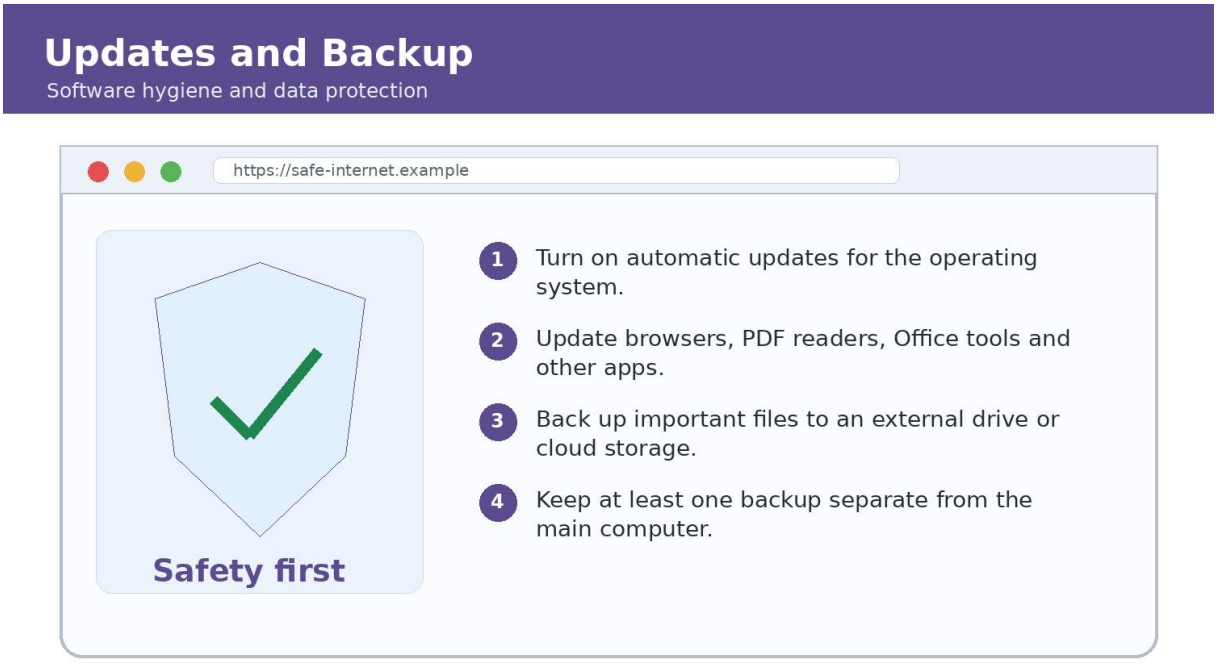


Figure 4. Updates close security weaknesses, while backup protects important data.

4. Safe downloads and external files

Downloading is a normal part of Internet use, but it is also one of the main ways through which harmful files enter a computer. A user may search for a program and click the first result without checking whether the website is official. This is risky because search results, advertisements, and fake download pages may lead to unsafe files.

The safest rule is to download software from the official website of the developer or from trusted application stores. For example, Microsoft Office should be downloaded from the official Microsoft website or installed through the official Microsoft account. Users should avoid unofficial versions, cracked programs, key generators, and unknown installers because they may contain malware.

External files are another important risk. These files may arrive by e-mail, through a USB key, from Bluetooth transfer, from messaging applications, or from shared cloud folders. Even if the sender is known, the file should be handled carefully if it is unexpected or has a strange name.

Before opening external files, users should:

- Scan the file with antivirus software.
- Check the file name and extension, for example .pdf, .docx, .exe, or .zip.
- Avoid opening files that ask to enable macros unless the source is fully trusted.
- Do not open executable files from unknown senders.
- Confirm with the sender if the message looks unusual or unexpected.
- Delete suspicious files instead of trying them out.

A common danger is a file that pretends to be a document but is actually an executable program. For example, a file may look like “homework.pdf.exe”. If the system hides extensions, the user may only see “homework.pdf” and think it is safe. This is why it is useful to show file extensions in the operating system settings.

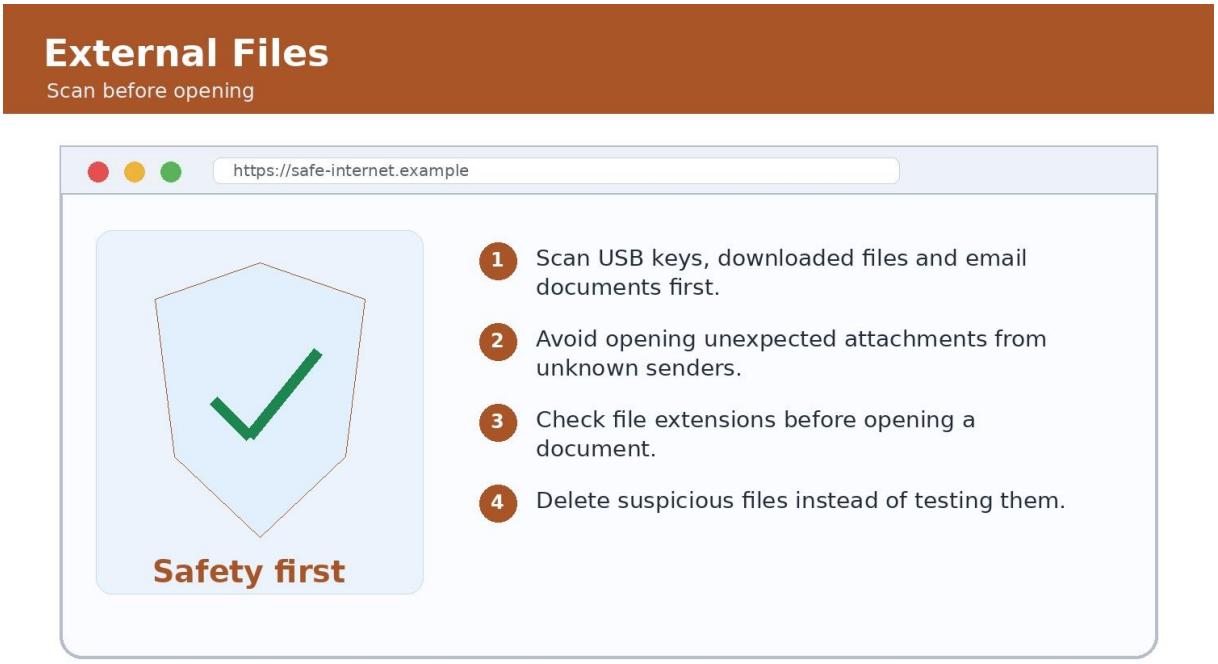


Figure 5. External files from USB drives or e-mail should be scanned before opening.

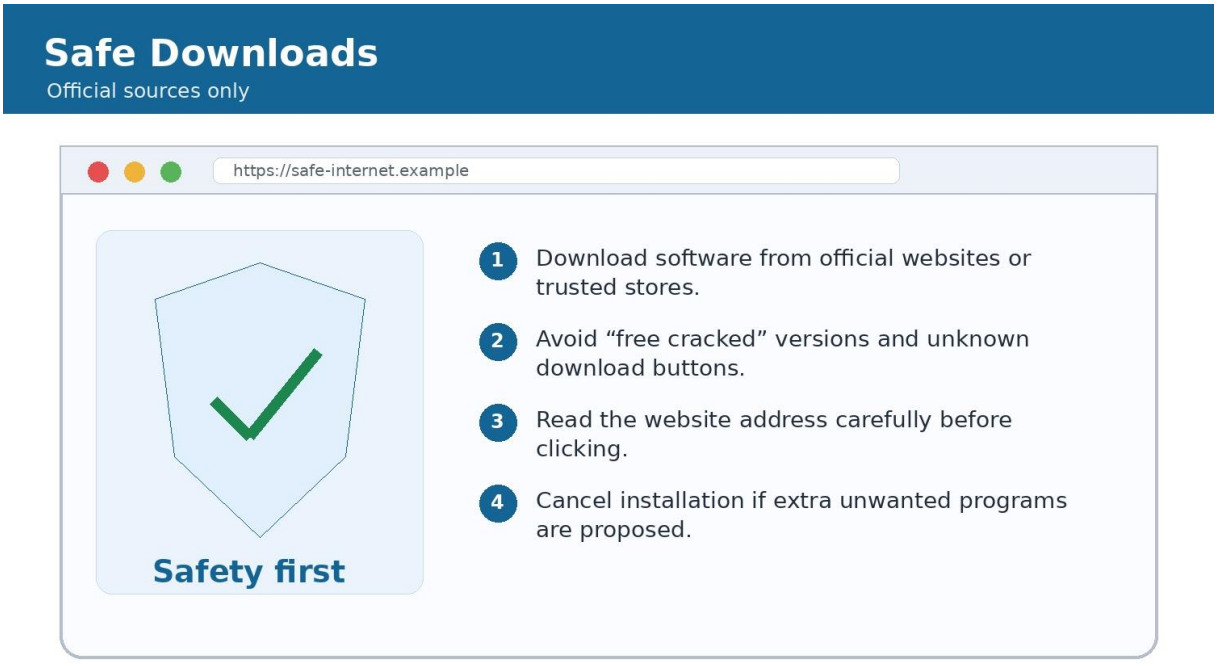


Figure 6. Safe downloads should come from official websites or trusted stores.

5. Password security and two-step authentication

Passwords protect access to accounts such as e-mail, learning platforms, social networks, cloud storage, and university services. If a password is weak or reused, several accounts may be exposed at the same time. A strong password should be long, unique, difficult to guess, and kept private.

A common mistake is using simple passwords such as 123456, password, birth dates, names, phone numbers, or the same password for all accounts. These passwords are dangerous because they can be guessed or found in leaked databases. Another mistake is sharing passwords with friends or sending them through messages. A password should be treated like a personal key.

Password security can be improved by following these rules:

- Use a different password for each important account.
- Make passwords long. A long passphrase is often easier to remember and harder to guess.
- Avoid personal information such as name, birth date, phone number, or student number.
- Do not write passwords in visible notebooks or share them by phone or message.
- Change passwords immediately if you suspect that an account has been exposed.
- Use a password manager when appropriate and when you understand how to protect it.

Two-step authentication, also called two-factor authentication or 2FA, adds another layer of protection. Instead of using only the password, the account also asks for a second confirmation, such as a code sent by SMS, a notification on the phone, a code from an authentication application, or a security key.

Two-step authentication is important because a stolen password alone may not be enough to enter the account. For example, if someone discovers the password of an e-mail account, they may still need the verification code that arrives on the owner's phone.

However, users must also protect the second factor. They should not send verification codes to anyone. A legitimate company or teacher will not ask a student to share a verification code. If someone asks for such a code, it is probably an attempt to steal the account.

Weak practice	Why it is risky	Better practice
Using the same password everywhere	One leak can expose many accounts	Use a unique password for each important service
Using a birth date or name	It can be guessed from personal information	Use a long phrase with mixed words and characters

Sharing a password with a friend	You lose control of the account	Keep passwords private
Ignoring 2FA	The account depends on one barrier only	Activate two-step authentication

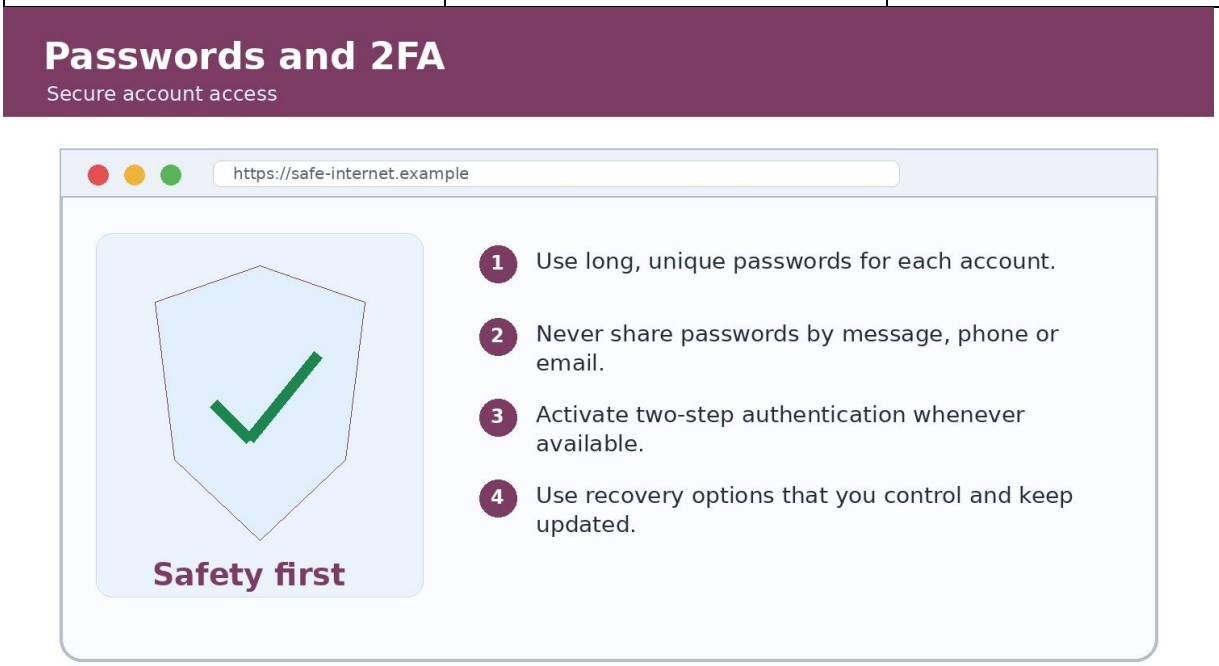


Figure 7. Strong passwords and two-step authentication improve account security.

6. Public Wi-Fi precautions

Public Wi-Fi networks are available in places such as cafés, hotels, airports, universities, libraries, and public spaces. They are useful because they provide Internet access, but they can also create risks when they are open, poorly configured, or fake.

The main risk of public Wi-Fi is that the user does not fully control the network. A malicious person may create a fake network with a name similar to a real one. This is sometimes called an “evil twin” network. The user may connect to it by mistake and expose data. Other risks include weak encryption, interception of unprotected traffic, fake login pages, and automatic connection to unsafe networks.

When using public Wi-Fi, students should be especially careful with passwords, e-mail accounts, banking information, cloud storage, and university platforms. It is better to avoid sensitive operations on public networks unless the connection is trusted and the website uses secure encryption.

Safe practices on public Wi-Fi:

- Ask for the correct network name before connecting.
- Avoid entering passwords or banking information on unknown public networks.
- Turn off automatic connection to open networks.
- Use websites that begin with https:// and avoid pages that show security warnings.
- Log out after finishing your work.
- Prefer mobile data for sensitive operations when possible.
- Do not share files with everyone on the public network.

Public Wi-Fi is not automatically dangerous in every situation, especially when modern encryption is used by websites and applications. However, careful behavior remains necessary because fake networks, unsafe login pages, and user mistakes can still create problems.

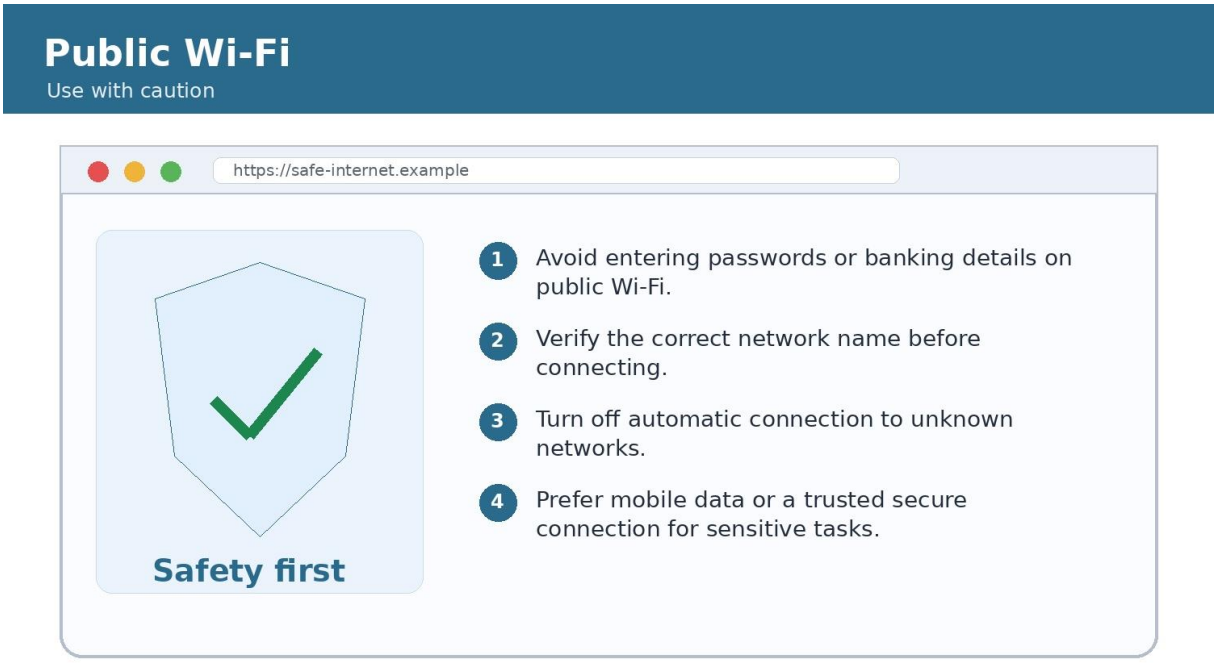


Figure 8. Public Wi-Fi should be used carefully, especially for passwords and sensitive information.

7. Securing the home Wi-Fi network

The home Wi-Fi network is the private wireless network used at home. It connects computers, smartphones, tablets, printers, televisions, and other devices to the Internet. If the home Wi-Fi network

is not protected, other people may use the connection, slow it down, access shared files, or try to attack connected devices.

The first rule is to use a strong Wi-Fi password. A weak password such as 12345678, family name, or phone number can be guessed. The password should be long and should combine words, numbers, and symbols. It should not be shared publicly or written in places where visitors can see it.

The second rule is to use modern wireless security. Older standards such as WEP are insecure and should not be used. Modern routers usually support WPA2 or WPA3. Users should choose the strongest option available in the router settings.

The third rule is to protect the router administration page. Many routers come with default usernames and passwords such as admin/admin. These should be changed if possible because attackers may know the default credentials. Router firmware should also be updated when updates are available.

Basic steps to secure home Wi-Fi:

19. Change the default router administration password.
20. Use a strong Wi-Fi password.
21. Select WPA2 or WPA3 encryption if available.
22. Avoid sharing the Wi-Fi password with unknown people.
23. Update router firmware when the provider or manufacturer offers updates.
24. Create a guest network for visitors if the router supports it.
25. Place the router in a secure location and avoid unnecessary exposure of its reset button.

Securing home Wi-Fi is important not only for privacy but also for responsibility. If someone uses an unprotected Wi-Fi connection to perform illegal or harmful activities, the owner of the connection may face problems. Therefore, protecting the home network is a basic part of digital citizenship.

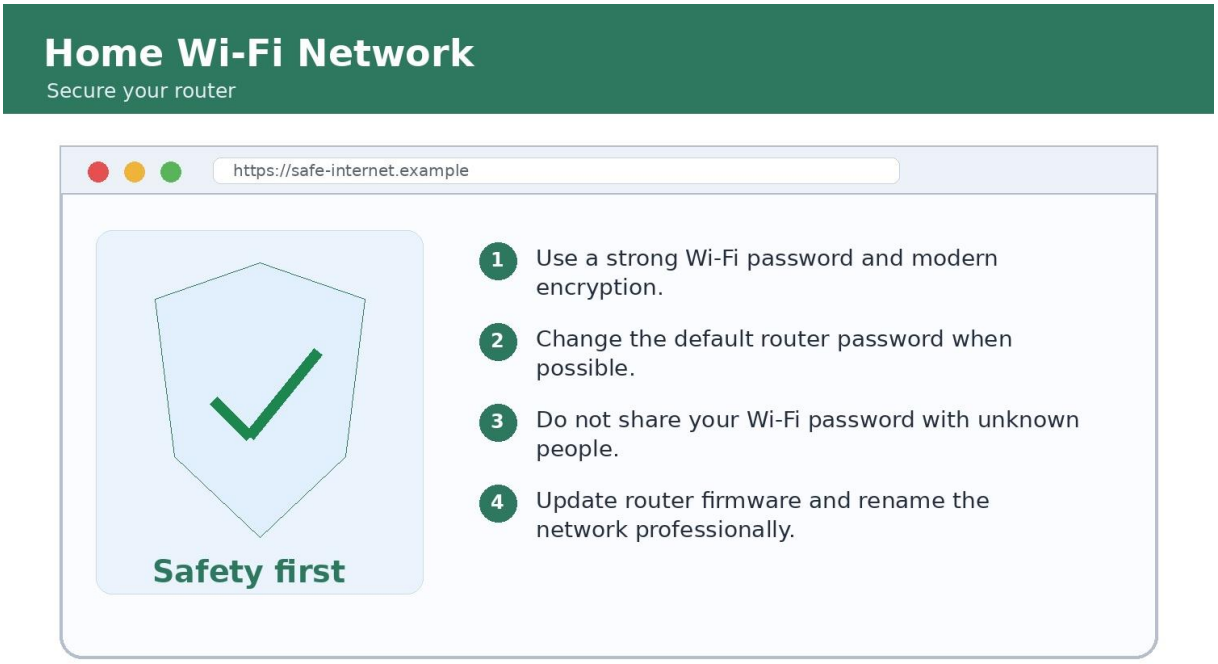


Figure 9. A secure home Wi-Fi network requires a strong password and protected router settings.

Practical guide: safe browsing checklist

The following checklist can be used during practical work in the computer lab or at home. Students should apply each step and tick it when completed.

Task	Student action	Done
Check antivirus status	Open the security center and verify that protection is active	☐
Scan an external file	Right-click the file or USB drive and choose scan	☐
Check updates	Open system settings and verify update status	☐
Create a backup folder	Copy important files to external storage or cloud	☐
Inspect a download source	Verify that software comes from the official website	☐

Improve one password	Replace a weak password with a long unique one	☐
Activate 2FA	Enable two-step authentication for an e-mail account if available	☐
Review Wi-Fi settings	Check that the home network uses a strong password	☐

Chapter summary

Safe Internet use is based on simple but important habits. Users should protect their devices with security software, update systems and applications, back up important data, scan external files, download only from trusted sources, use strong passwords, activate two-step authentication, be careful on public Wi-Fi, and secure the home Wi-Fi network.

The most important idea is that cybersecurity is not only a technical matter. It is also a matter of behavior. A user who clicks without checking, shares passwords, ignores warnings, or uses unsafe networks may expose personal and academic information. On the other hand, a careful user can reduce many risks by applying basic rules consistently.

Practical activities

Activity 01: Identify risky behavior

Read the following situations and decide whether the behavior is safe or risky. Explain your answer briefly.

- A student downloads a free version of a paid program from an unknown website.
- A student receives an unexpected file by e-mail and scans it before opening it.
- A student uses the same password for e-mail, Facebook, and the university platform.
- A student connects to public Wi-Fi and enters banking information.
- A student backs up important files every week to cloud storage.

Activity 02: Create a safe password strategy

Write three rules that you will personally apply to protect your online accounts. Then propose one example of a strong password pattern without revealing a real password.

Activity 03: Public Wi-Fi decision

Imagine that you are in a café and need to send an important university document. Explain the precautions you should take before connecting and sending the file.

Evaluation questions

- Define Internet safety and explain why it is important for students.
- Why should antivirus software be updated and used regularly?
- Explain the difference between software updates and data backup.
- Give four rules for safe downloading.
- Why should external files be scanned before opening?
- Give five characteristics of a secure password.
- What is two-step authentication? Why is it useful?
- Mention four precautions when using public Wi-Fi.
- How can users secure their home Wi-Fi network?
- Explain why user behavior is important in cybersecurity.

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PART TWO: TIC AND E-LEARNING 2

LECTURE 01: Editing Software

1. Introduction to Document Editing Software

Document editing software has become one of the basic tools of digital literacy. In the past, documents were mainly produced using typewriters or handwritten methods. Today, documents are created and modified using software applications that provide many functions: writing, formatting, correcting, saving, printing, exporting, and sharing. These applications are used by students, teachers, researchers, administrative employees, companies, journalists, translators, and almost every person who works with information.

A document can be a simple letter, a course handout, a research paper, a meeting report, a CV, a form, a certificate, a business proposal, an invoice, or a book chapter. The document editor helps transform raw text into an organized and readable document. It gives the user control over the appearance of the text, the page structure, the headings, the margins, the tables, the images, and the final format.

Documents remain important because they are easy to store, easy to distribute, and easy to consult later. In academic life, documents are used to submit assignments, write reports, prepare dissertations, design course materials, and communicate official information. In professional life, documents are used for contracts, decisions, instructions, reports, and archives. For this reason, mastering editing software is not optional; it is a fundamental skill for study and work.

The expression “editing software” may refer to different categories of applications. Some programs are installed on the computer, such as Microsoft Word or LibreOffice Writer. Others are web-based and run inside the browser, such as Google Docs or Microsoft Word Online. Some are specialized for plain text, some for PDF, and others for collaborative writing. The choice depends on the user’s needs, the type of document, the required format, and the working environment.

The modern document editor is more than a writing tool. It is also a communication tool. It can allow a teacher to comment on a student’s work, a team to write a report together, an administrator to prepare official letters, and a researcher to manage references and formatting. In this sense, editing software connects writing, organization, collaboration, and publication.

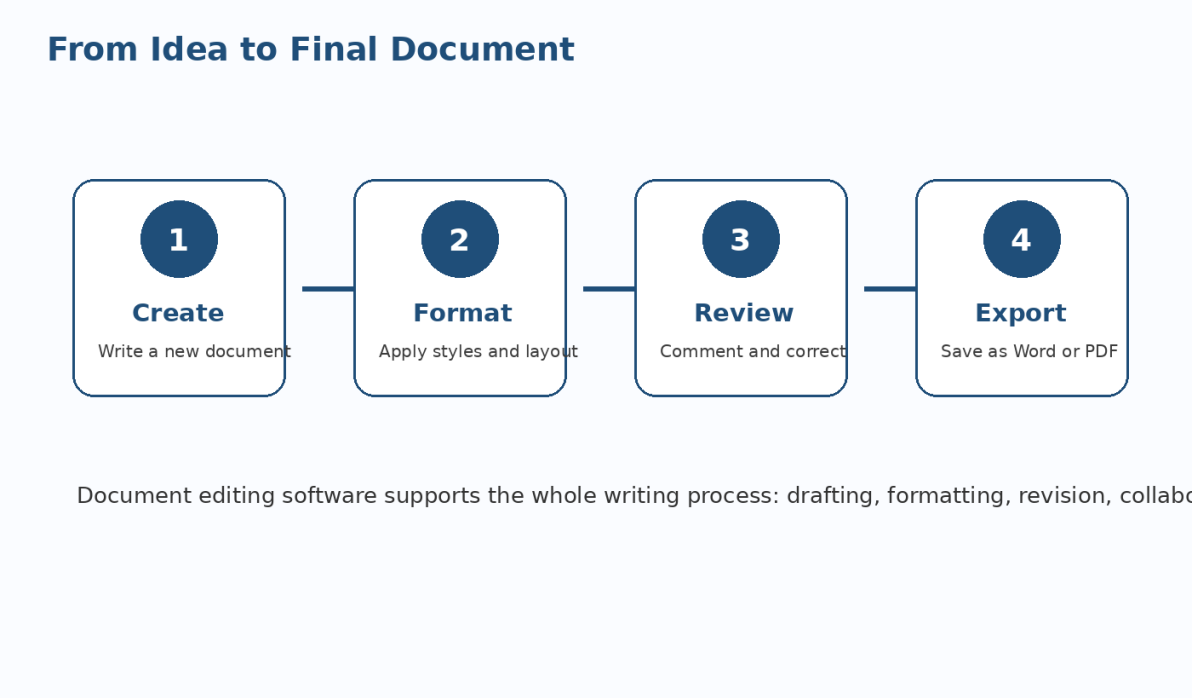


Figure 2. The general workflow of document creation and editing.

A good document editor helps the user pass through several stages. The first stage is creation, where the user opens a new file and begins writing. The second stage is formatting, where the user organizes the page, applies headings, adjusts spacing, inserts tables, and improves readability. The third stage is review, where the document is corrected, commented, and improved. The fourth stage is export or publication, where the document is saved in the required format such as DOCX or PDF.

Students should understand that the quality of a document depends not only on the information inside it, but also on its presentation. A document with unclear headings, poor spacing, inconsistent fonts, and missing references may appear unprofessional even if the ideas are good. Editing software helps prevent these problems by offering tools for structure, style, spelling, layout, and review.

2. Definition of Document Editing Software

Document editing software can be defined as a class of computer applications used to create, modify, format, organize, save, and share digital documents. These applications allow users to write text, insert objects, manage layout, apply styles, correct errors, and export the final result to several file formats.

In a simple definition, document editing software is a tool that allows the user to prepare a digital document. However, a more complete definition should include three dimensions. First, it is a writing tool because it enables the production of textual content. Second, it is a formatting tool because it

controls the visual structure of the document. Third, it is a management tool because it allows saving, sharing, converting, and sometimes collaborating on the same file.

The main difference between a basic text editor and a document editor is the level of formatting and structure. A basic text editor, such as Notepad, is mainly used to write plain text without advanced layout. A document editor, such as Microsoft Word or LibreOffice Writer, allows the user to change fonts, insert images, create tables, generate page numbers, use headings, add references, and export the document in professional formats.

Document editors are sometimes called word processors. A word processor is a type of software designed for writing and formatting text documents. Today, the term document editing software is broader because it may include online editors, collaborative tools, PDF editors, and applications that combine writing with cloud storage, templates, grammar correction, and sharing options.

A document editor usually includes a set of visible tools. The toolbar or ribbon contains commands such as copy, paste, font, paragraph alignment, line spacing, bullets, numbering, table insertion, image insertion, comments, and export. The page area is where the user writes and organizes the content. The navigation pane helps move between sections. The review tools allow comments, track changes, and correction suggestions. The file menu allows saving, printing, exporting, and sharing.

Concept	Explanation	Example
Plain text editor	A simple tool for writing text without advanced formatting.	Notepad or basic code editor
Word processor	A tool for writing and formatting documents.	Microsoft Word, LibreOffice Writer
Online document editor	A web-based editor that allows access through the browser.	Google Docs, Word Online
PDF editor	A tool used to read, annotate, sign, or modify PDF files.	Adobe Acrobat, PDF tools
Collaborative editor	A tool that allows several users to edit or comment on a document.	Shared online documents

The definition of editing software must also include file formats. A file format defines how the document is stored and opened. Common formats include DOCX, PDF, ODT, RTF, and TXT. Each

format has a specific use. DOCX is widely used for editable documents. PDF is commonly used for final documents because it preserves layout. TXT is used for plain text. ODT is an open document format used by some free office suites.

From a practical point of view, the best document editing software is not always the most expensive or the most famous. It is the software that fits the user's needs, supports the required formats, works on the available devices, and helps produce a clear and professional document.

3. Main Uses of Editing Software

Editing software is used in many contexts. Its main role is to transform information into a structured document that can be read, shared, printed, archived, or submitted. The following uses are especially important for students and future professionals.

Figure 3. Common fields where document editing software is used.

3.1 Academic Writing

Students use editing software to write assignments, reports, summaries, research papers, dissertations, and presentations. Academic writing requires structure, clarity, references, page numbering, tables, and sometimes figures. A document editor helps students respect formatting instructions such as font size, line spacing, margins, title hierarchy, and bibliography style.

For example, when a student writes a research assignment, the document editor allows the student to create a title page, add headings and subheadings, insert page numbers, add tables, include figures, and format references. These tools make the work easier to read and more professional.

3.2 Administrative Documents

Administrative services use editing software to prepare official letters, certificates, minutes of meetings, reports, forms, announcements, and internal memos. These documents need a formal layout, institutional identity, clear language, and stable formatting. Editing software supports this through templates, headers, footers, tables, logos, and standardized formats.

In a university environment, many documents are created every day: student lists, examination schedules, official requests, course descriptions, training programs, reports, and invitations. A good editor improves the speed and consistency of these documents.

3.3 Professional Communication

In the workplace, editing software is used to create business proposals, project reports, contracts, invoices, CVs, internal guides, and policy documents. These documents often represent the image of an organization. A poorly formatted document may create a negative impression, while a clear and well-designed document gives credibility.

Professional communication also requires version control. A document may pass through several versions before approval. Editing software can help users compare versions, accept or reject changes, and keep the final approved version.

3.4 Teaching and Training Materials

Teachers and trainers use document editors to prepare lectures, exercises, course summaries, evaluation grids, lesson plans, and handouts. Editing software makes it possible to include images, diagrams, tables, examples, and instructions. It also allows the teacher to export the document to PDF before sharing it with students.

Good teaching documents should be easy to read and visually organized. Headings, spacing, bullets, examples, and illustrations help learners follow the content. For this reason, editing software is directly related to pedagogical quality.

3.5 Publishing and Distribution

Many documents are not only written; they are also published. A document may be printed, uploaded to Moodle, sent by e-mail, shared through cloud storage, or converted to PDF. Editing software supports these actions by offering export and sharing options. PDF export is particularly important when the sender wants to preserve the layout and avoid accidental modifications.

Students should learn to distinguish between an editable file and a final file. An editable file such as DOCX can be modified by the recipient. A final file such as PDF is usually used for submission, printing, and official sharing.

4. Criteria for Choosing Editing Software

Choosing document editing software should be based on practical criteria. The best choice depends on what the user wants to do, the type of files used, the level of collaboration required, the available devices, and the importance of security and accessibility. The following criteria help students evaluate editing software in a logical way.

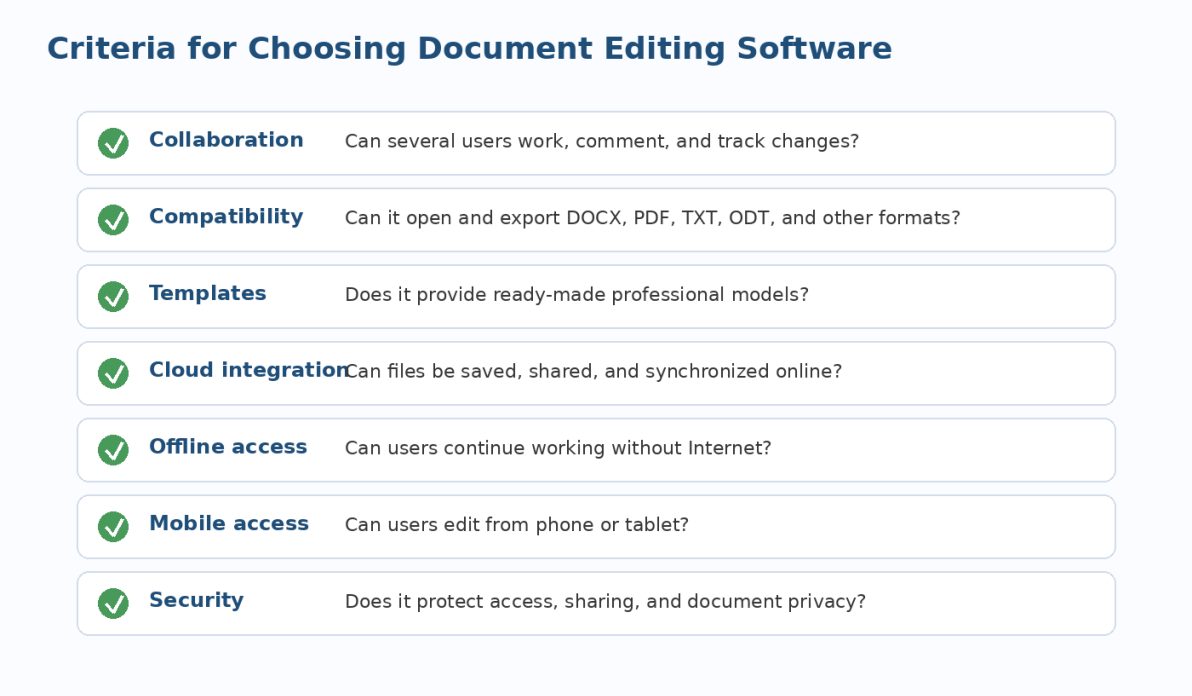


Figure 4. Main criteria for choosing document editing software.

4.1 Ease of Use

Ease of use means that the software is simple enough for the user to learn and use without excessive difficulty. A clear interface, visible commands, logical menus, and helpful templates make the

software more accessible. For beginners, ease of use is very important because complicated software can discourage learning.

However, ease of use should not mean lack of power. A good editor offers basic tools for beginners and advanced tools for experienced users. For example, a student may begin with simple typing and formatting, then later learn styles, tables of contents, comments, references, and export settings.

4.2 File Compatibility

File compatibility refers to the ability of the software to open, edit, and save different file formats. This criterion is essential because users often exchange documents with other people. If a teacher requests a DOCX file, the student must use software capable of producing a correct DOCX file. If the administration asks for PDF, the editor must export to PDF correctly.

Compatibility is also important for teamwork. If one person uses Microsoft Word and another uses LibreOffice or Google Docs, the document should remain readable and correctly formatted. Some complex layouts may change when moving between applications, so users should verify the final appearance before submission.

4.3 Templates

Templates are pre-designed document models. They save time and help users maintain consistency. Common templates include CVs, letters, reports, minutes of meetings, certificates, invoices, and project proposals. A template usually contains predefined margins, headings, fonts, colors, and sections.

Templates are useful in academic and administrative work because they reduce formatting errors. For example, an official report template can ensure that all reports follow the same style. Students can also use templates to prepare assignments or internship reports, provided that they respect the teacher’s instructions.

4.4 Cost and Licensing

Some editing software is commercial and requires payment or subscription. Other software is free or open source. Cost is an important criterion, especially for students and institutions with limited budgets. However, cost should be considered together with features, compatibility, support, and security.

A free tool may be sufficient for basic writing, but a professional environment may require advanced features, integration, or official support. Users should also respect software licenses and avoid illegal copies. Using legal and updated software is safer and more ethical.

4.5 Security and Privacy

Security and privacy are important when documents contain personal data, administrative information, research data, or confidential content. The software should protect files from unauthorized access and offer secure sharing options. In cloud-based tools, users should understand who can view, comment, or edit the document.

Students should be careful when sharing documents through public links. A link with open access may allow anyone to view the document. It is better to choose the correct permission: view only, comment only, or edit. Sensitive documents should not be shared with unknown people.

4.6 Accessibility

Accessibility means that documents can be used by people with different needs, including people who use screen readers or need clear visual structure. Good editing software supports headings, alt text for images, readable fonts, sufficient contrast, and logical tables. These features help make documents inclusive and easier to navigate.

For students, accessibility is also a matter of clarity. A document with proper headings, page numbers, and readable spacing is easier for everyone to use. Therefore, accessibility should be considered part of good document design.

5. Collaboration, Compatibility, and Cloud Integration

Modern document editing software is increasingly connected to collaboration and cloud services. The user no longer works only on a local file saved on one computer. Many documents are now shared, edited online, synchronized between devices, and reviewed by several people. This creates new opportunities but also requires careful management.

5.1 Collaboration Features

Collaboration features allow several users to participate in the preparation of the same document. These features include real-time co-editing, comments, suggestions, track changes, and version history. Real-time co-editing means that more than one user can work on the document at the same time.

Comments allow users to discuss specific parts of the document. Track changes allows the author to see what was modified. Version history allows users to return to earlier versions if necessary.

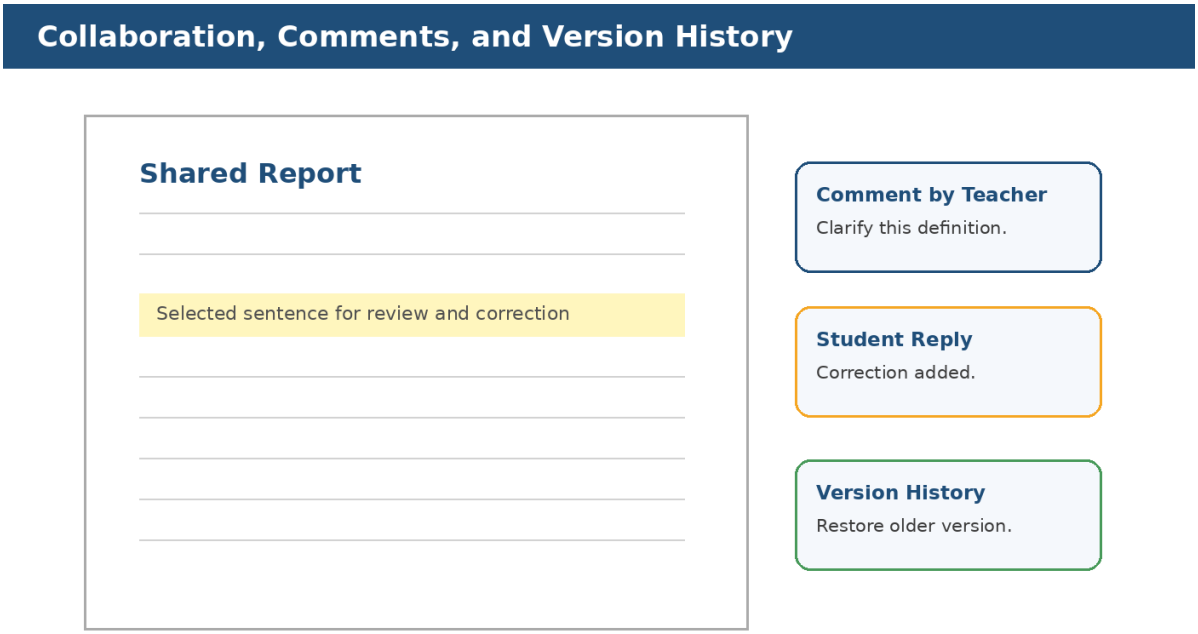


Figure 5. Example of comments and version history in collaborative editing.

In academic work, collaboration features are useful for group assignments, supervision, peer review, and correction. A teacher can comment on a student's draft without rewriting the whole document. A group of students can divide sections and write together. A supervisor can suggest corrections while preserving the student's original text.

Collaboration must be organized. If several users edit the same document without rules, the result may become confused. Teams should agree on responsibilities, deadlines, file names, and the final person responsible for revision. They should also avoid deleting other members' work without discussion.

5.2 Compatibility with Common Formats

Compatibility is central to document sharing. The most common formats include DOCX, PDF, ODT, RTF, and TXT. DOCX is often used for editable documents. PDF is used for final distribution because it preserves layout across devices. ODT is an open format used by some free office suites. TXT is useful for simple text without formatting. RTF can preserve some formatting while remaining widely readable.

Format	Main Use	Advantages	Limitations

DOCX	Editable text documents	Advanced formatting, comments, track changes	May display differently in some applications
PDF	Final documents and printing	Preserves layout and is easy to share	Editing is more limited
ODT	Open document editing	Open standard and useful with free office suites	Some users may be less familiar with it
TXT	Plain text	Small file size and universal readability	No advanced formatting
RTF	Basic formatted text exchange	Readable by many programs	Less suitable for complex documents

A student should always check the required format before submitting a document. If the teacher asks for PDF, sending DOCX may be considered incorrect. If the document must be edited by the receiver, PDF may not be the best format. Understanding file formats helps avoid communication problems.

5.3 Cloud Integration

Cloud integration allows documents to be stored online and accessed from different devices. Instead of saving the file only on one computer, the user can store it in a cloud service and open it from another computer, smartphone, or tablet. This is useful for remote work, group projects, and backup.

Cloud integration also helps ensure that users work on the latest version of the document. When a file is shared online, team members can avoid sending many versions by e-mail. Instead, they can work on one shared document. This reduces confusion between versions such as “final”, “final2”, and “final corrected”.

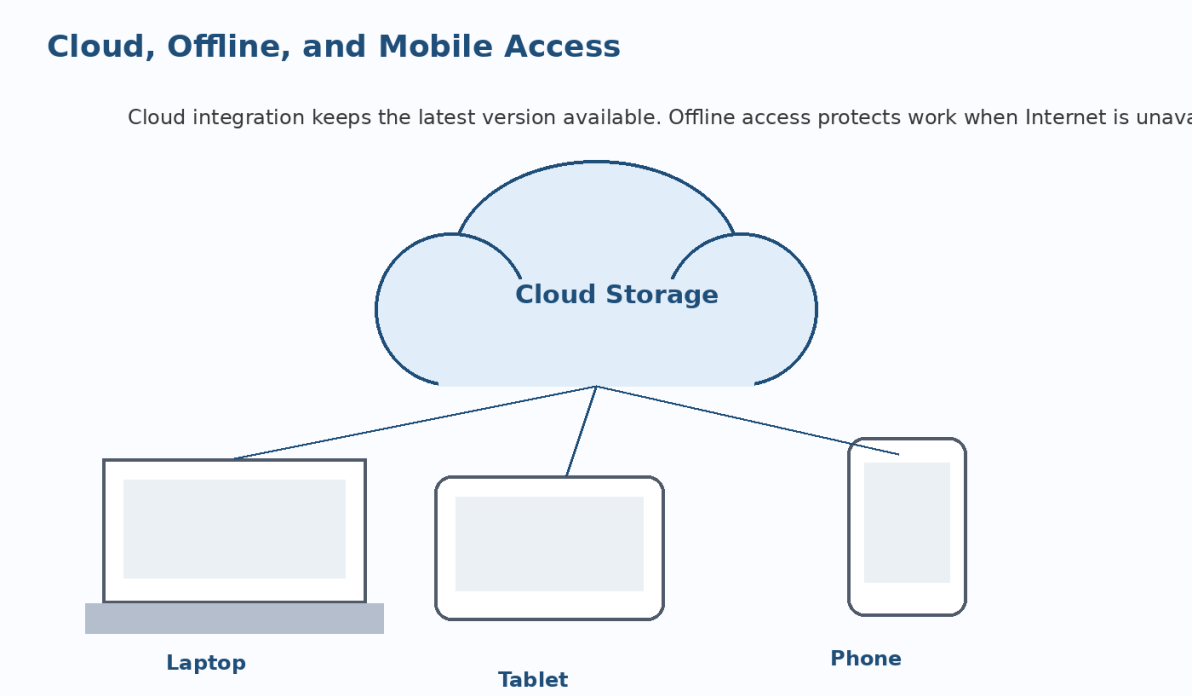


Figure 6. Cloud, offline, and mobile access in modern document editing.

However, cloud integration requires attention to privacy and access permissions. The user must know whether the document is private, shared with specific people, or accessible to anyone with the link. Before sharing a document, it is necessary to verify the permission level: viewer, commenter, or editor.

5.4 Offline Access

Offline access means that the user can continue working without an Internet connection. This feature is important when the Internet is unstable or unavailable. Some applications allow users to save documents locally and synchronize changes later when the connection returns.

For students, offline access is useful during travel, in areas with weak Internet, or when preparing work at home. It also reduces the risk of losing time because of temporary connectivity problems. Nevertheless, users should save their work regularly and verify that synchronization is complete before assuming the online version is updated.

5.5 Mobile Access

Mobile access means that the document can be opened, read, edited, or commented on from a smartphone or tablet. This feature is practical when the user needs to consult a document quickly, correct a small mistake, send a file, or review feedback while away from the computer.

Mobile access does not always replace computer editing. Some tasks, such as complex formatting, table design, references, and final layout checking, are easier on a computer. Therefore, mobile access should be seen as a complementary function, not always as the main editing environment.

5.6 Good Practices for Students

- Use clear file names that include the course, assignment, group, and full name.
- Save an editable version and a final PDF version when required.
- Check formatting after converting between formats.
- Use headings instead of manual bold titles only.
- Do not share editing access unless the person really needs to modify the file.
- Use comments and suggestions instead of deleting other people's work in group projects.
- Keep a backup copy on another device or cloud service.
- Review the final document before submission: spelling, page numbers, titles, and attachments.

Practical Activity

This activity helps students apply the lecture content using a real document editor.

- Open a document editor such as Microsoft Word, LibreOffice Writer, or an online editor.
- Create a new document titled "My First Professional Document".
- Write a short paragraph about your university studies.
- Apply Times New Roman, size 12, and line spacing 1.5.
- Add a heading, a table with two columns, and one image or icon.
- Save the document as DOCX, then export it as PDF.
- Rename the files using this model: ICT_Lecture01_Group_FullName.docx and ICT_Lecture01_Group_FullName.pdf.
- Share the file with your teacher using the requested method.

Checklist for Choosing Editing Software

Question	Yes/No	Observation
Can the software open and save the file formats required by my teacher or organization?		

Does it allow me to format headings, spacing, tables, images, and page numbers?		
Can I export the final document as PDF?		
Does it support comments, track changes, or collaborative work?		
Can I access my files from another device if needed?		
Can I work offline if Internet access is not available?		
Are sharing permissions clear and secure?		

Evaluation Questions

- Define document editing software in your own words.
- Explain the difference between a plain text editor and a document editor.
- Give four examples of documents that can be created with editing software.
- Why is file compatibility important when choosing editing software?
- Explain the role of templates in document preparation.
- What is the difference between DOCX and PDF?
- Explain how collaboration features can help students in group assignments.
- Mention three risks related to sharing documents through cloud services.
- Why is offline access useful for students?
- Prepare a short professional document and export it in two formats.

Conclusion

Editing software is one of the most important tools in digital work. It allows users to create, format, correct, share, and preserve documents. For students, it supports assignments, reports, presentations,

administrative communication, and academic writing. For professionals, it supports official communication, business documents, collaboration, and archiving.

The quality of a digital document depends on both content and presentation. A clear structure, readable formatting, correct file format, and professional layout are essential. Students should therefore learn not only how to write text, but also how to use editing tools intelligently.

Choosing editing software should be based on practical criteria such as ease of use, compatibility, templates, cloud integration, offline access, mobile access, security, and collaboration. Modern document editors are no longer isolated tools; they are part of a connected digital environment where documents can be edited, reviewed, synchronized, and shared across devices.

LECTURE 02: Microsoft Word

1. Introduction to Microsoft Word

Microsoft Word is one of the most widely recognized applications for producing written documents. It is used in education, administration, business, research, and everyday communication. In universities, students use Microsoft Word to prepare assignments, reports, theses, internship documents, administrative letters, and presentations of written work. Teachers and administrative staff also use it to create syllabi, course handouts, exam papers, meeting reports, official correspondence, and institutional documents.

The importance of Microsoft Word does not come only from its popularity. It comes from the fact that it combines writing, editing, formatting, reviewing, sharing, and exporting in one environment. A document can start as a simple draft, then become a carefully formatted academic report, then be reviewed by a teacher or colleague, and finally be exported as a PDF file for official submission.

Historically, word processors changed writing practices by replacing typewriters and allowing users to revise text without rewriting entire pages. Kruse and Rapp (2023) explain that word-processing software helped transform writing into a digital practice where text is not fixed from the beginning but can be continuously edited, reorganized, formatted, saved, copied, and shared. This flexibility explains why word processors became central tools in modern literacy and academic production.

In the context of ICT education, Microsoft Word is not taught only as a software product. It is taught as a practical tool for digital document literacy. Students must learn how to produce readable, organized, professional, and shareable documents. A student who knows only how to type text is not yet competent in Word. Competence means understanding document structure, formatting choices, file formats, reviewing tools, and responsible sharing practices.

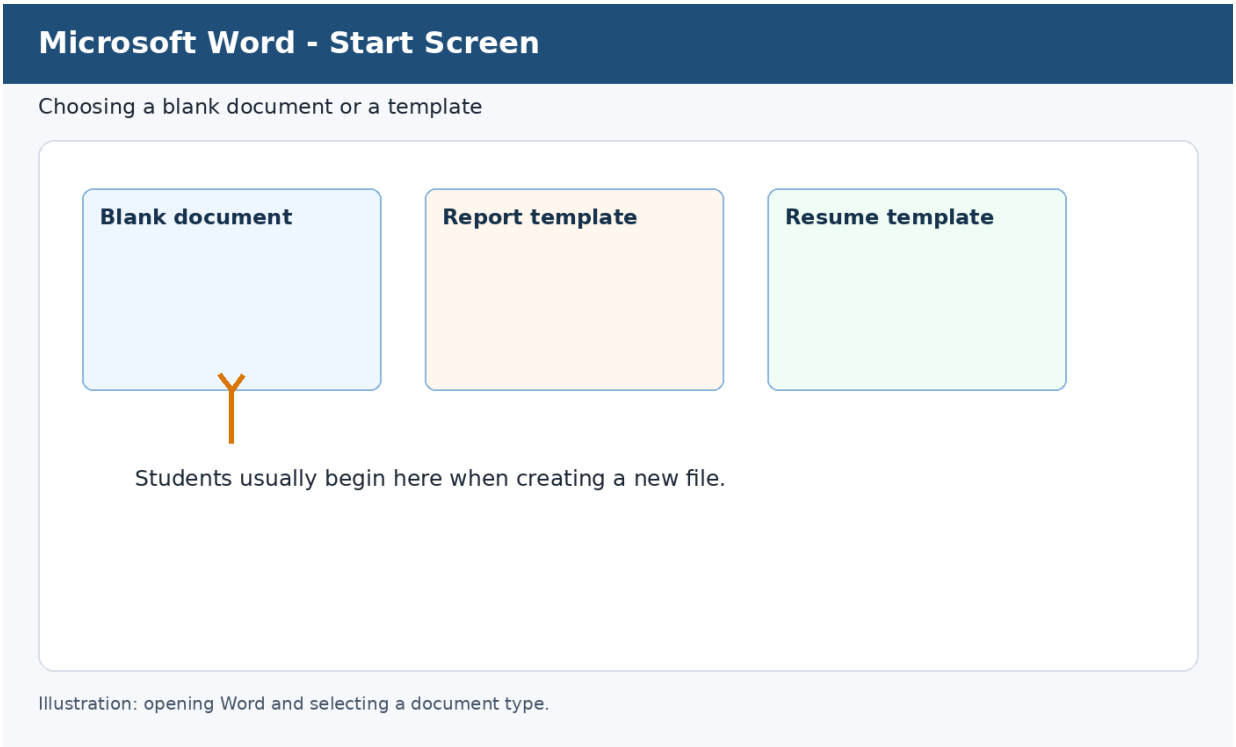


Figure 2. Starting Microsoft Word and choosing a document type.

1.1 Why Microsoft Word Matters for Students

For students, Microsoft Word is a basic academic tool. It helps them transform ideas into structured documents. A report, for example, is not simply a collection of paragraphs. It needs a title, subtitles, page numbers, clear spacing, tables, references, and sometimes images. Microsoft Word provides tools that allow the student to build this structure progressively.

Microsoft Word also helps students respect academic presentation standards. Teachers often ask students to use a specific font, such as Times New Roman, a specific size, such as 12, a specific line spacing, such as 1.5, and justified paragraphs. These requirements are part of academic writing conventions. Word allows students to apply them consistently.

Another important reason is employability. In many administrative and professional jobs, the ability to create clean documents is expected. Writing a CV, preparing a report, drafting a letter, designing a meeting agenda, or completing a form are common tasks. Therefore, learning Microsoft Word is a transferable skill that can support students beyond university.

1.2 From Typing to Document Production

Typing means entering characters using a keyboard. Document production is more advanced. It includes planning the content, organizing sections, applying headings, formatting paragraphs, inserting tables or images, checking spelling, reviewing changes, saving the file correctly, and exporting it in a suitable format. Microsoft Word supports this complete process.

A beginner may use Word as a digital sheet of paper. An advanced user uses it as a structured document environment. The difference appears in the final result. A well-prepared document is easier to read, easier to evaluate, and more professional. This is why students should learn not only where buttons are located, but also why and when to use each feature.

2. Microsoft Word as a Word-Processing Application

Microsoft Word is a word-processing application. A word-processing application is software designed to create, edit, format, store, and print text-based documents. Unlike a basic text editor, which usually focuses on plain text, a word processor allows the user to control the visual and structural appearance of the document.

A plain text editor is useful for simple notes or programming code. However, it does not usually provide advanced formatting tools such as styles, tables, page numbers, footnotes, automatic references, comments, track changes, mail merge, or PDF export. Microsoft Word provides these tools, which makes it suitable for academic and professional documents.

Overbaugh (1992) described word processors as tools that affect both the product of writing and the process of writing. This means that Word helps users produce a final document, but it also changes the way they write: they can draft quickly, move paragraphs, revise sentences, insert comments, correct errors, and reorganize the document many times before submitting it.

2.1 Basic Functions of a Word Processor

The first function of Microsoft Word is text creation. The user can type letters, words, sentences, paragraphs, lists, and pages. The second function is editing. Editing includes adding, deleting, replacing, moving, copying, and correcting text. The third function is formatting. Formatting changes the appearance of the document through fonts, colors, spacing, alignment, margins, borders, and styles.

The fourth function is document structuring. Word allows the use of headings, sections, page breaks, tables of contents, captions, footnotes, endnotes, headers, footers, and page numbers. These elements are important in long academic documents because they help readers navigate the text.

The fifth function is reviewing. Word includes spelling and grammar checking, comments, track changes, comparison of versions, and document protection. These features are especially important when a document is prepared by more than one person or when it is corrected by a teacher.

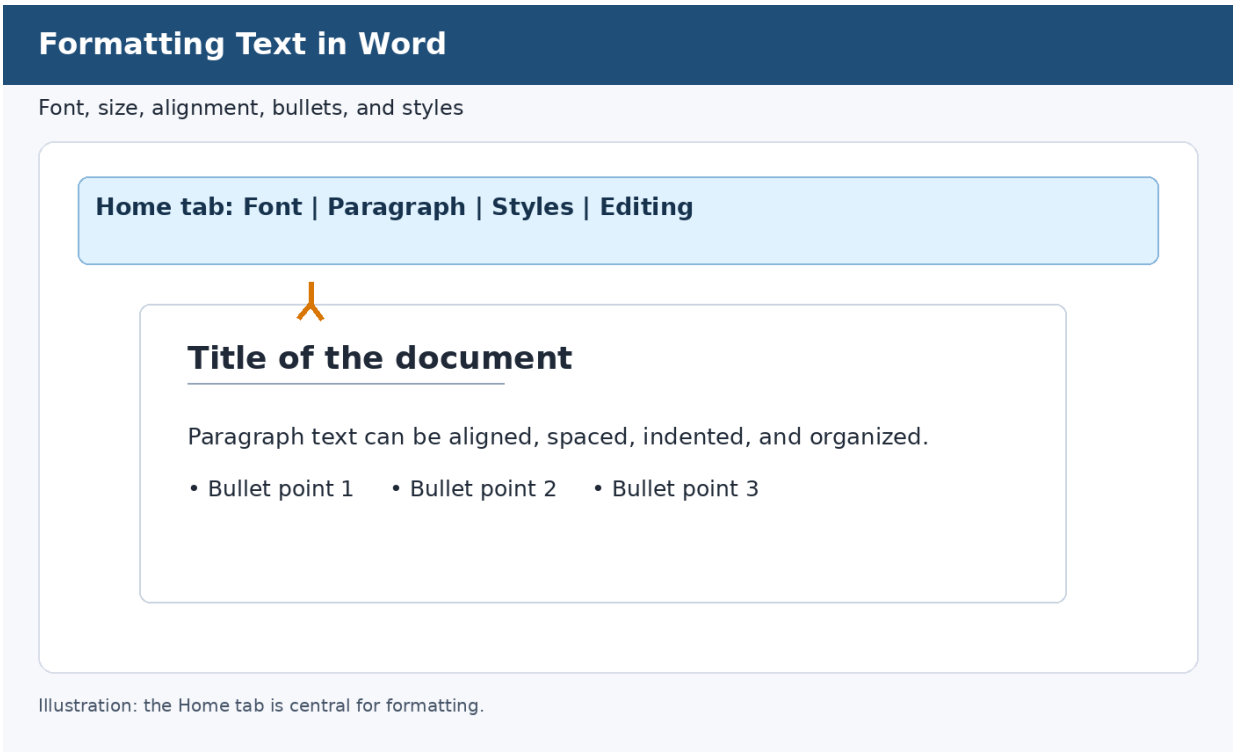


Figure 3. Formatting text using the Home tab.

2.2 Main Parts of the Microsoft Word Interface

When the user opens Microsoft Word, several visual elements appear. Understanding these elements helps the student work faster and avoid confusion. The title bar shows the file name. The ribbon contains tabs and commands. The document area is where the user writes. The status bar shows information such as page number and word count. The zoom control changes how large the page appears on the screen.

Interface element	Function
Title bar	Displays the document name and application name.
Ribbon	Contains tabs such as Home, Insert, Layout, References, Review, and

	View.
Document area	The main space where the user types and edits the document.
Status bar	Shows page number, word count, language, and zoom information.
Quick Access Toolbar	Provides quick access to common actions such as Save, Undo, and Redo.
Navigation pane	Helps users move through headings and pages in long documents.

2.3 File Formats Used in Microsoft Word

A file format defines how information is stored. Microsoft Word commonly uses the .docx format for editable documents. Older versions used .doc. Word can also open or export other formats such as .pdf, .rtf, .txt, and sometimes .odt. Choosing the correct format is important.

The .docx format is useful when the document must remain editable. A student who is still working on a report should save it as .docx. The PDF format is useful when the document is finished and must preserve its layout. For official submission, PDF is often preferred because it reduces the risk of formatting changes on another computer.

Format	**Use**
.docx	Main editable Word document format.
.pdf	Final version for printing, sharing, or official submission.
.txt	Plain text without advanced formatting.
.rtf	Rich Text Format, compatible with several word processors.
.odt	OpenDocument text format used by some open-source office suites.

3. Integration with Microsoft 365 Tools

Microsoft Word can be used as a desktop application, but it also becomes more powerful when connected to Microsoft 365 services. Microsoft 365 is a cloud-based ecosystem that includes applications and services such as Word, Excel, PowerPoint, OneDrive, Outlook, Teams, and SharePoint. When Word is connected to this ecosystem, documents can be stored online, accessed from different devices, shared with others, and edited collaboratively.

The integration of Word with Microsoft 365 reflects a general movement from isolated software to connected digital workspaces. In the past, a user often created a file on one computer, saved it on a USB key, and transferred it manually. Today, the same user can save the file in OneDrive, open it from

another computer, share it with a teacher, and receive comments without sending many separate versions.

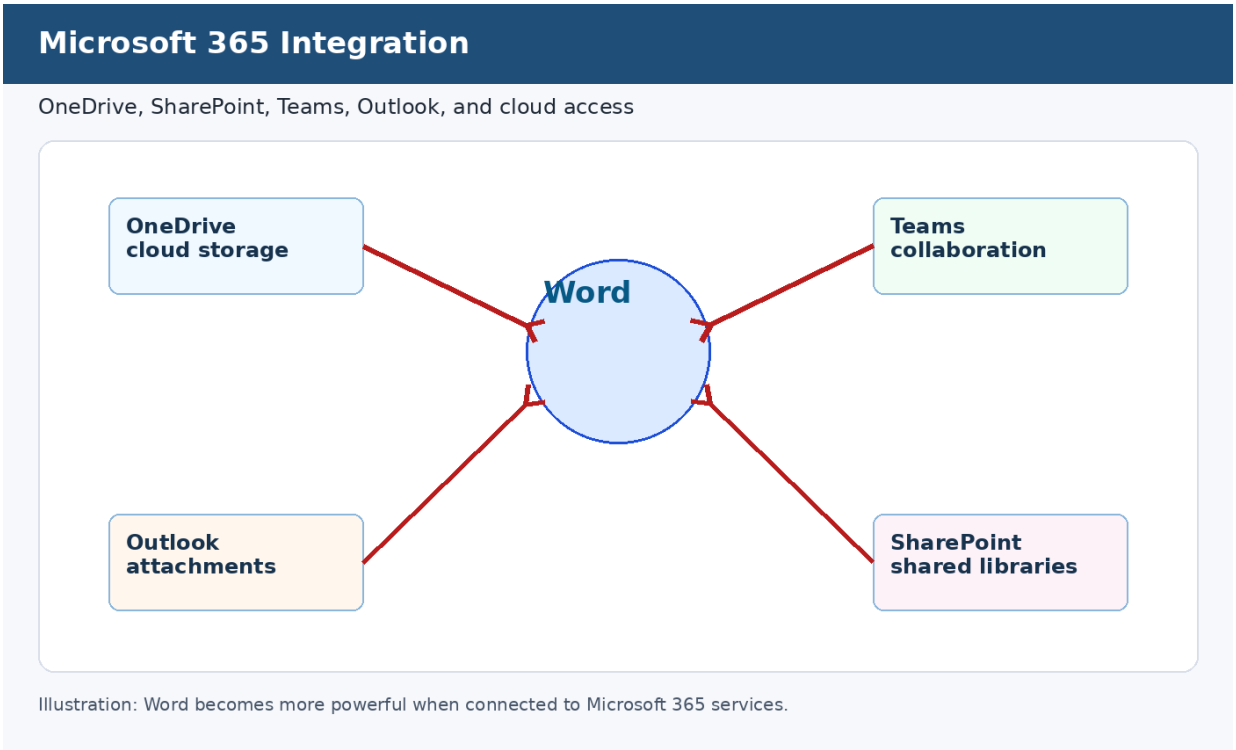


Figure 4. Microsoft Word integration with Microsoft 365 tools.

3.1 OneDrive and Cloud Storage

OneDrive is Microsoft's cloud storage service. When a Word document is saved in OneDrive, it is stored online and can be accessed using an Internet connection. This provides several advantages. The user can access the document from different devices, reduce the risk of losing work if the computer fails, and share the document through a link.

Cloud storage also supports automatic saving. When AutoSave is enabled, Word can save changes continuously. This is useful because many students lose work when they forget to save manually. However, users should still keep organized backups, especially for important academic documents.

3.2 Teams and Collaborative Work

Microsoft Teams is used for communication and collaboration. When a Word document is shared through Teams, students or colleagues can discuss the work, edit the document, and follow project progress. This is useful for group assignments because members can work on the same file instead of creating many different versions.

Collaborative writing requires more than technology. Lowry, Curtis, and Lowry (2004) show that collaborative writing involves roles, strategies, activities, and coordination. Microsoft Word supports collaboration through comments, track changes, and co-authoring, but students must still agree on responsibilities, deadlines, and rules for editing.

3.3 Outlook and E-mail Attachments

Outlook is Microsoft's e-mail service and communication application. Word documents can be sent as attachments or shared as links. Sending a file as an attachment is simple, but it may create problems if several versions circulate at the same time. Sharing a OneDrive link can be better when the sender wants the recipient to access the latest version.

Before sending a Word document by e-mail, students should check the file name, file format, and content. A file named "document1.docx" is not professional. A better name is "ICT_Assignment_Group02_Ahmed_Benali.docx". Clear file names help teachers and administrations organize received files.

3.4 SharePoint and Institutional Document Management

SharePoint is often used by institutions to store and manage shared documents. In a university or organization, SharePoint can provide common spaces for departments, teams, committees, or projects. Word documents stored in SharePoint can be controlled with permissions, version history, and collaborative editing.

For students, the most important idea is that modern document work is no longer limited to personal files. Documents may be part of institutional workflows. This means that users must understand access rights, shared folders, version control, and responsible document sharing.

4. Main Features of Microsoft Word

Microsoft Word contains many features. Some are basic and should be mastered by all students. Others are advanced and become important when preparing long reports, theses, administrative documents, or collaborative files. This section presents the main features that students should understand.

4.1 Text Formatting

Text formatting allows users to control the appearance of text. Common formatting options include font type, font size, bold, italic, underline, font color, highlighting, alignment, line spacing, indentation, and paragraph spacing. These tools help improve readability.

However, formatting should be used carefully. A professional document does not need too many colors, fonts, or decorative effects. Academic documents usually require consistency, simplicity, and clarity. For example, using Times New Roman 12 with 1.5 line spacing is common in many university documents.

- Use one main font for the body of the text.
- Use headings to organize sections rather than manually enlarging text everywhere.
- Use line spacing to improve readability.
- Avoid excessive colors and decorative effects in academic documents.
- Justify or align paragraphs according to the teacher's instructions.

4.2 Styles and Headings

Styles are one of the most important features in Microsoft Word. A style is a predefined set of formatting options applied to text. For example, "Heading 1" may include a specific font size, color, and spacing. When the user applies styles to headings, Word can automatically generate a table of contents and help the reader navigate the document.

Many students format titles manually by making them bold or larger. This method may work for short documents, but it becomes difficult in long documents. Styles provide consistency and save time. If the user modifies the style, all headings using that style can update automatically.

Style	Typical use
Title	Main document title.
Heading 1	Main sections or chapters.
Heading 2	Subsections.
Normal	Body paragraphs.
Caption	Titles of figures and tables.

4.3 Page Layout and Margins

Page layout controls the physical organization of the page. It includes margins, orientation, paper size, columns, page breaks, and section breaks. In academic documents, page layout must be clean and stable. Margins should not be too narrow, because the document may need to be printed or bound. Page breaks are useful for starting a new section on a new page.

Students should avoid creating layout by pressing the Enter key many times. This method is unstable because the layout may change when text is added or deleted. It is better to use page breaks, section breaks, and paragraph spacing.

4.4 Inserting Tables, Images, and Shapes

Microsoft Word allows the user to insert tables, pictures, icons, shapes, charts, and SmartArt. These elements can make a document clearer when used correctly. Tables are useful for organizing data, comparing concepts, and presenting schedules. Images can illustrate practical steps. Shapes can highlight processes or relationships.

Visual elements should support the meaning of the document. They should not be inserted only for decoration. Every important image or table should have a clear title or caption. This helps the reader understand its purpose.

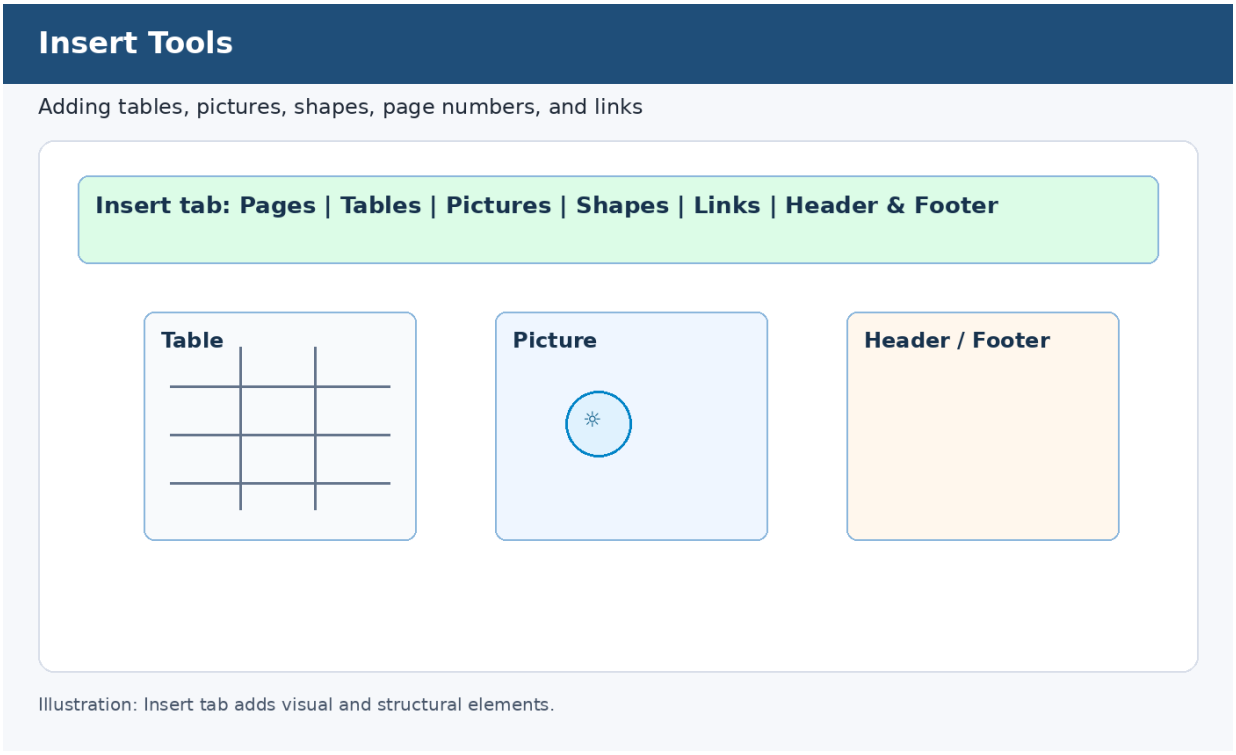


Figure 5. Insert tools for tables, pictures, links, and page elements.

4.5 References, Footnotes, and Table of Contents

The References tab includes tools that are useful for academic writing. Students can insert footnotes, endnotes, citations, captions, indexes, and tables of contents. These tools are especially important in long documents such as research reports and theses.

A table of contents helps the reader navigate a long document. To create it correctly, the student should use heading styles. Footnotes help add explanations or references without interrupting the main text. Captions help identify figures and tables.

4.6 Spelling and Grammar Tools

Microsoft Word includes spelling and grammar checking tools. These tools can detect many errors and suggest corrections. They are useful, but they are not perfect. The user must still read the document carefully. Automatic correction may sometimes suggest an inappropriate change or fail to detect a contextual error.

The best practice is to use spelling tools as support, not as a replacement for human revision. Students should review the meaning, logic, and clarity of their sentences. A document can have correct spelling but still be unclear or poorly organized.

4.7 Comments and Track Changes

Comments allow a reader to add notes without changing the main text. Track Changes allows Word to display edits such as insertions, deletions, and formatting modifications. These tools are extremely useful in academic supervision, peer review, and group assignments.

For example, a teacher can add comments to a student’s report, suggesting improvements. A group member can edit a section while allowing others to see what was changed. The document owner can then accept or reject changes. Hetzroni and Shrieber (2004) show that word processing can support writing development, especially when editing and revision are part of the learning process.

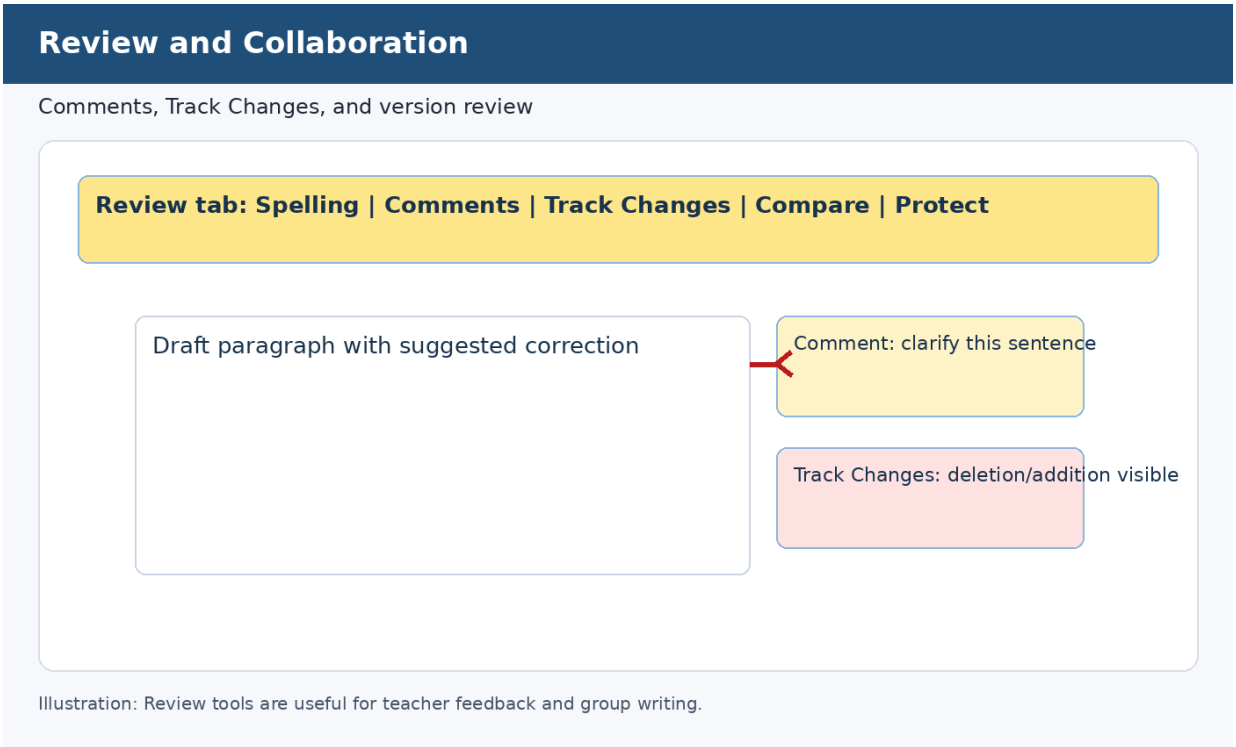


Figure 6. Review tools: comments and Track Changes.

4.8 Saving, Exporting, Printing, and Sharing

Saving is one of the most basic but most important actions in Word. Users should save documents with clear file names and in appropriate folders. Exporting allows users to create a PDF version. Printing allows users to produce a paper copy. Sharing allows users to send the document to others by attachment or link.

A good digital habit is to keep versions organized. For example, a student can save “Report_Draft01”, “Report_Draft02”, and “Report_Final”. However, too many versions can become confusing. Cloud version history can solve part of this problem, but students should still develop disciplined file-naming practices.

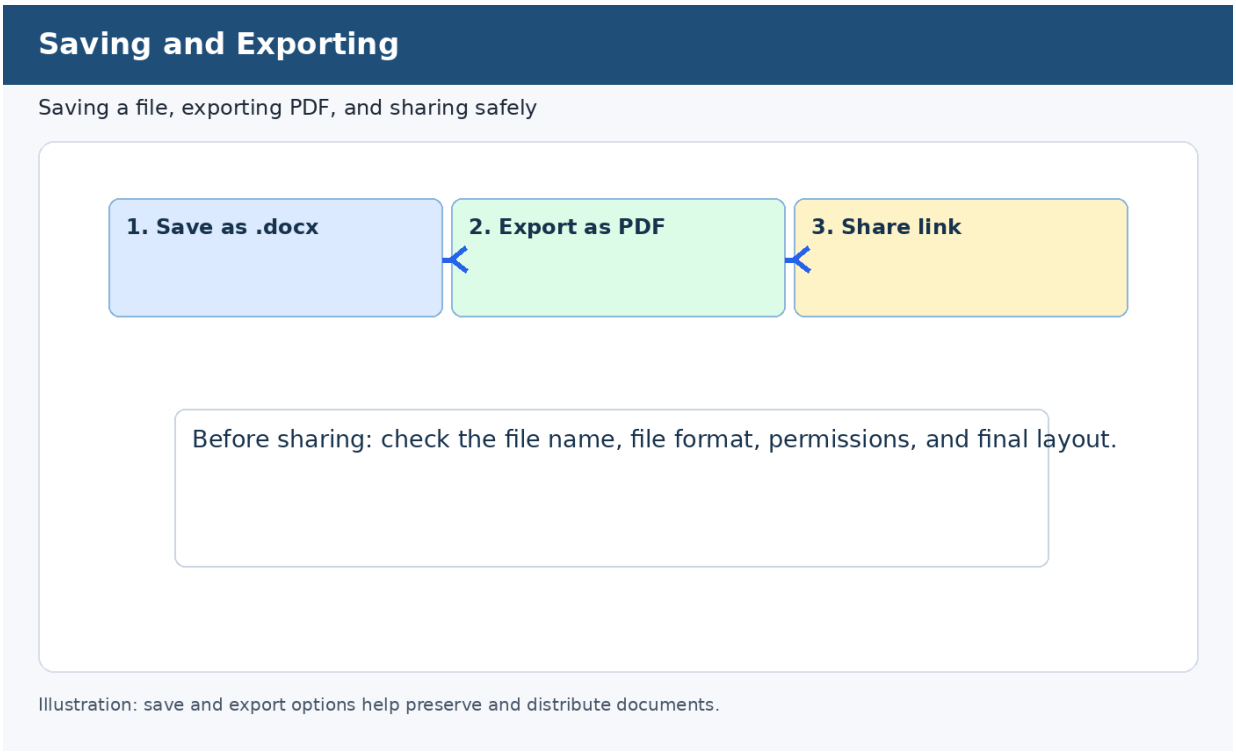


Figure 7. Saving, exporting, and sharing a document.

4.9 Templates

Templates are pre-designed document models. They may include ready-made formatting, titles, tables, colors, and page structure. Templates can be used for CVs, reports, letters, brochures, certificates, forms, and meeting minutes. They save time and help users maintain consistency.

Nevertheless, templates must be adapted carefully. A template is not a complete document. The user must replace sample text, check formatting, verify language, and make sure the final document matches the intended purpose.

5. Limitations of Microsoft Word

Microsoft Word is powerful, but it has limitations. Understanding these limitations helps students avoid frustration and use the software more effectively. No software is perfect for every situation. Word is excellent for many documents, but some tasks may require other tools, such as Excel for complex calculations, PowerPoint for presentations, LaTeX for highly technical scientific typesetting, or specialized design software for professional graphic layout.

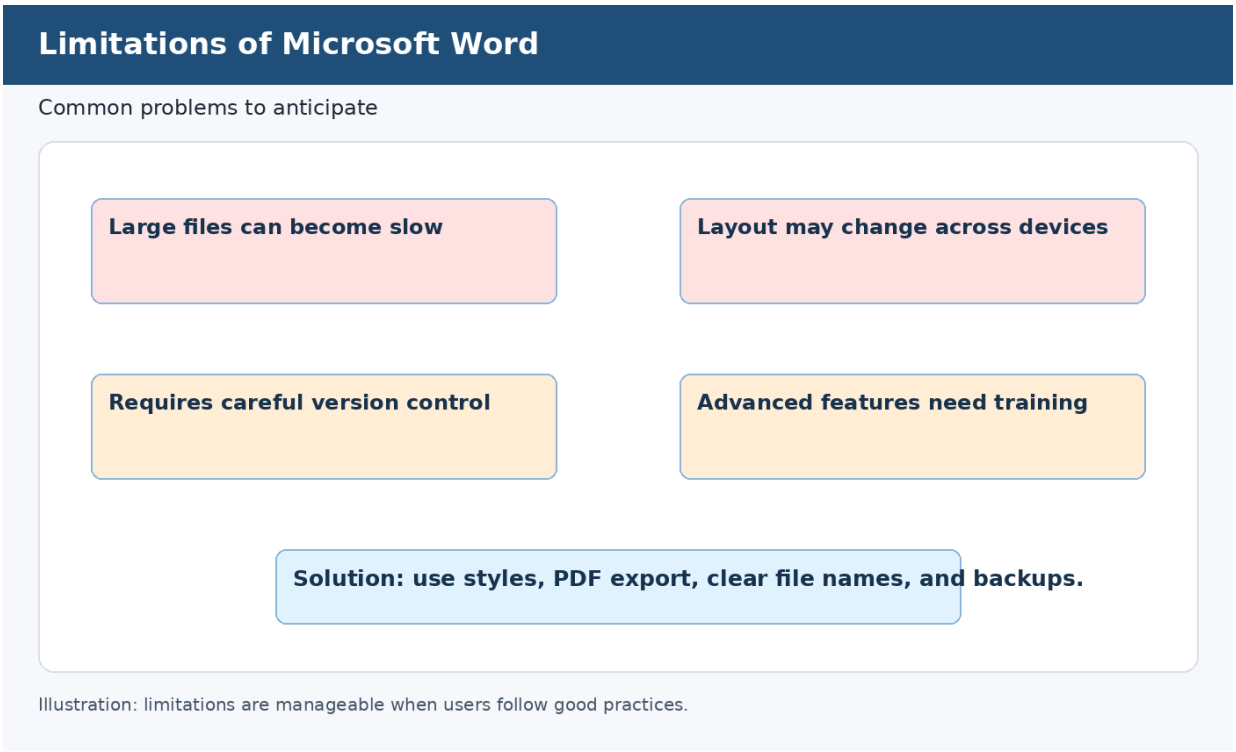


Figure 8. Common limitations and practical solutions.

5.1 Layout Instability

One common limitation is layout instability. A document may look correct on one computer but slightly different on another computer. This can happen because of missing fonts, different printer settings, different Word versions, or changes in page size. To reduce this problem, users should use standard fonts, avoid excessive manual spacing, and export the final version as a PDF when the document is ready.

5.2 Complexity of Advanced Features

Word contains many advanced tools, such as section breaks, automatic numbering, cross-references, mail merge, macros, forms, and collaborative reviewing. These tools can be very useful, but they require training. Beginners may accidentally create formatting problems if they use advanced tools without understanding them.

The solution is progressive learning. Students should first master basic typing, formatting, saving, and exporting. Then they can learn styles, tables, images, page numbers, and references. Finally, they can explore advanced tools such as mail merge or document protection.

5.3 Compatibility Issues

Although Word supports many formats, compatibility problems may appear when a document is opened in another application or an older version. Some formatting, fonts, comments, or layout elements may not appear exactly the same. This is why users should choose the correct format. Editable collaboration can use .docx, while the final submission should often use PDF.

5.4 Cost and Access

Microsoft Word may require a license depending on the version and institutional access. Some users have Microsoft 365 accounts through their university, while others may not. This can create access differences. Alternatives such as Word for the web or open-source office suites may be useful when students do not have the desktop version.

5.5 File Size and Performance

Documents containing many high-resolution images, charts, or embedded objects can become large and slow. Large files may be difficult to send by e-mail. To reduce file size, users can compress images, remove unnecessary objects, and use cloud links instead of sending heavy attachments.

5.6 Overdependence on Automatic Tools

Spelling checkers, grammar suggestions, templates, and automatic formatting are helpful, but they can create overdependence. Students may accept corrections without understanding them or use templates without adapting them. Digital competence requires critical use of tools. The user remains responsible for the content, accuracy, structure, and final quality of the document.

Practical Checklist for Students

Before submitting a Word document, students should verify the following points:

- The document has a clear title and organized headings.
- The font, size, and spacing respect the teacher’s instructions.
- The paragraphs are readable and consistently formatted.
- Page numbers are inserted when required.
- Tables and images are clear and have captions when needed.
- Spelling and grammar have been checked manually and with Word tools.
- The file name is professional and includes the student’s name or group when required.

- The final version is exported as a PDF if the teacher requests a stable format.
- The document is saved in more than one safe location, especially for important work.

Practical Activities

Activity 01: Create a Simple Academic Document

Create a one-page document about the importance of ICT in university studies. Use Times New Roman 12, line spacing 1.5, justified alignment, one title, two headings, and a page number in the footer.

Activity 02: Use Styles and Table of Contents

Create a short report with three sections. Apply Heading 1 to each section title, then insert an automatic table of contents at the beginning of the document.

Activity 03: Insert a Table and an Image

Prepare a table comparing Microsoft Word, Google Docs, and LibreOffice Writer. Insert an illustrative image or icon and add a caption under it.

Activity 04: Use Comments and Track Changes

Exchange a document with a classmate. Add two comments and modify one paragraph while Track Changes is activated. Then accept or reject the proposed changes.

Evaluation Questions

- Define Microsoft Word and explain its importance in academic work.
- What is the difference between a plain text editor and a word-processing application?
- Mention five elements of the Microsoft Word interface and explain their functions.
- Why are styles important in long documents?
- Explain the difference between .docx and .pdf formats.
- How does Microsoft Word integrate with OneDrive and Teams?
- Give four examples of features available in the Insert tab.
- What is the purpose of Track Changes?
- Mention three limitations of Microsoft Word.
- Give five rules for preparing a professional Word document before submission.

Conclusion

Microsoft Word is more than a typing tool. It is a complete word-processing environment that helps users create, edit, format, review, save, export, and share documents. For students, mastering Word is essential because academic work often depends on the ability to produce clean and structured documents.

This lecture explained Microsoft Word as a word-processing application, its integration with Microsoft 365 tools, its main features, and its limitations. The most important lesson is that good document production requires both technical knowledge and good judgment. Students must learn how to use Word tools correctly, but they must also understand why these tools matter for clarity, organization, academic quality, and professional communication.

LECTURE 03: Social Networks

Introduction

Social networks are among the most visible digital environments of contemporary life. They are used by students, institutions, companies, journalists, artists, public figures, families, and communities. They allow people to create profiles, connect with others, share information, follow news, publish content, and participate in discussions. For many users, social networking platforms are not only tools for communication; they are spaces for learning, identity expression, cultural participation, public debate, and professional visibility.

In an ICT course, studying social networks is important because these platforms combine several basic digital skills: account creation, profile management, online interaction, privacy settings, content publishing, media sharing, search, verification, and responsible communication. A student who understands social networks can use them more safely and more effectively in academic, professional, and personal contexts.

This lecture presents social networks from a conceptual, practical, and historical perspective. It begins with a definition, then clarifies the difference between social networks and social media. It explains the online experience, user profiles, online communities, and advanced features. Finally, it introduces the early pioneers of social networks and examines Friendster and MySpace as important examples in the development of social networking culture.

1. Definition of Social Networks

A social network is a structure made of individuals, groups, or organizations connected through relationships. Before the Internet, the term referred to real-life connections such as family ties, friendships, professional relations, and community membership. In the digital environment, a social network usually refers to an online platform that allows users to create a profile, connect with other users, and interact through messages, posts, comments, reactions, groups, and shared content.

In academic literature, social network sites are commonly described as web-based services that allow individuals to construct a public or semi-public profile, articulate a list of other users with whom they share a connection, and view and navigate their list of connections and those made by others. This definition highlights three essential dimensions: identity, connection, and visibility.

The first dimension is identity. A user is represented by a profile that may include a name, photo, description, interests, location, education, profession, and content history. The second dimension is connection. Users can connect through friend lists, followers, groups, subscriptions, or professional contacts. The third dimension is visibility. Social networks allow users to see connections, posts, comments, groups, trends, and sometimes the activities of others.

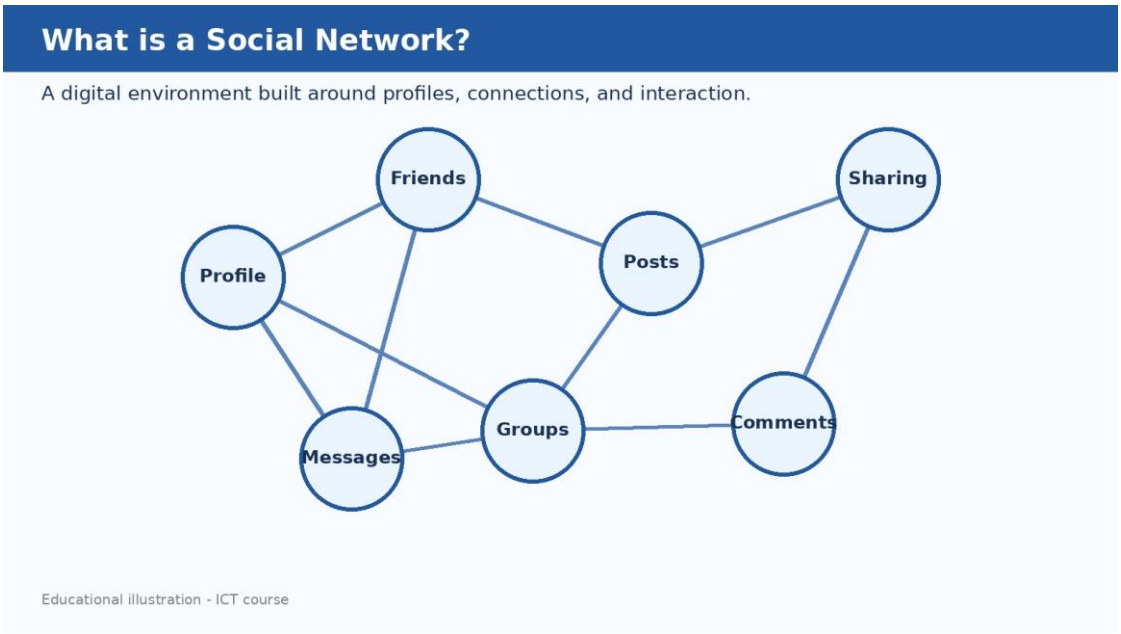


Figure 2. Social networks connect profiles, relationships, and interaction tools.

1.1 Key Components of a Social Network

- User profile: the digital representation of a person, organization, or group.
- Connections: friends, followers, contacts, subscribers, or group members.
- Content: posts, photos, videos, links, live streams, stories, and documents.
- Interaction: likes, comments, shares, replies, messages, reactions, and mentions.
- Community rules: terms of use, moderation policies, privacy settings, and reporting tools.
- Algorithms: automated systems that organize feeds, recommend content, and suggest connections.

1.2 Simple Definition for Students

A social network is an online platform where users create profiles, connect with other users, and communicate or share content inside a digital community.

1.3 Examples of Social Networking Platforms

Examples include Facebook, LinkedIn, Instagram, TikTok, X/Twitter, Snapchat, Reddit communities, and professional or educational platforms that organize users around profiles and relationships. Each platform has its own design and culture, but most of them are based on the same logic: identity, connection, participation, and sharing.

2. Difference Between Social Networks and Social Media

Many students use the terms social networks and social media as if they were exactly the same. They are related, but they are not identical. Social media is the broader concept. It includes digital platforms that allow users to create, publish, share, comment on, and distribute content. Social networks are a specific type of social media that emphasizes relationships between users and visible connections such as friends, followers, or contacts.

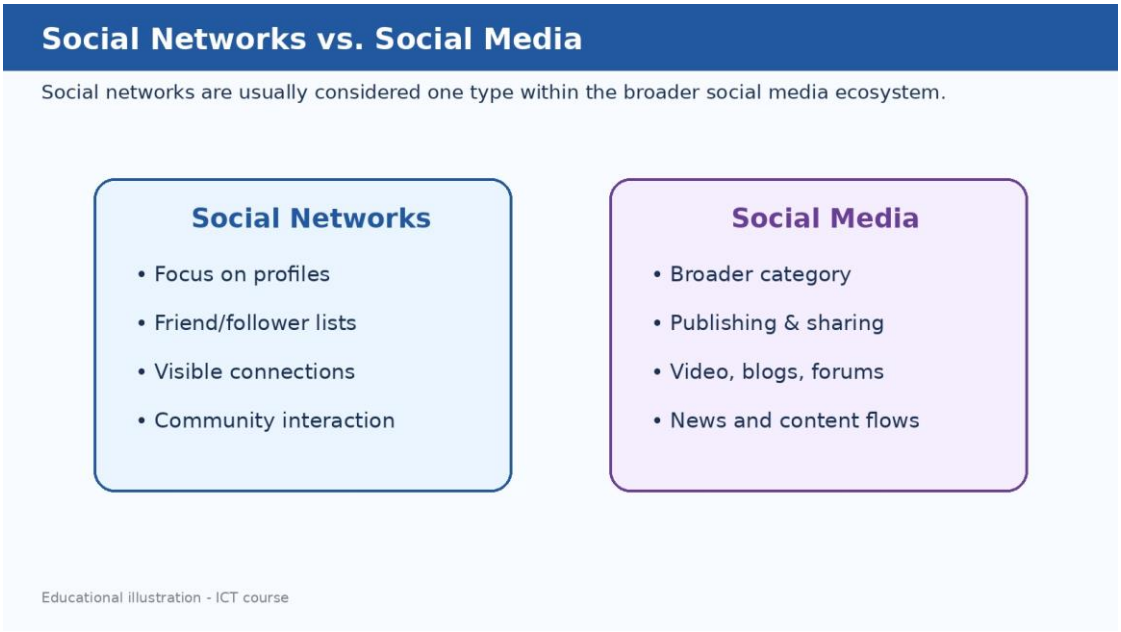


Figure 3. Social networks are one part of the broader social media ecosystem.

2.1 Social Media as a Broad Category

Social media includes several types of platforms: social networking sites, video-sharing platforms, blogs, microblogs, forums, collaborative platforms, messaging applications, content communities, and virtual worlds. The main idea is that users are not only receivers of information; they can also create and distribute information.

2.2 Social Networks as Relationship-Based Platforms

Social networks focus more strongly on the relationships between users. They help people build and maintain social links. These links may be personal, academic, professional, cultural, or commercial. For example, LinkedIn is built around professional profiles and contacts, while Facebook historically focused on personal networks and communities.

2.3 Comparison Table

Criterion	Social Networks	Social Media
Main focus	Building and maintaining relationships	Creating, publishing, and sharing content
Basic unit	Profile and connection list	Content item, channel, post, page, or media object
Examples	Facebook, LinkedIn, early MySpace, Friendster	YouTube, blogs, forums, TikTok, Instagram, Facebook
Typical action	Add friend, follow, connect, join group	Post, upload, share, comment, react
Educational value	Community building and academic networking	Access to learning resources and public communication

3. The Online Experience

The online experience refers to the way a user enters, navigates, interacts with, and leaves a digital platform. In social networks, this experience is shaped by the interface, account settings, notifications, recommendations, content feed, privacy tools, and the behavior of other users. A good online experience is not only a question of design; it also depends on safety, digital literacy, respect, and responsible participation.

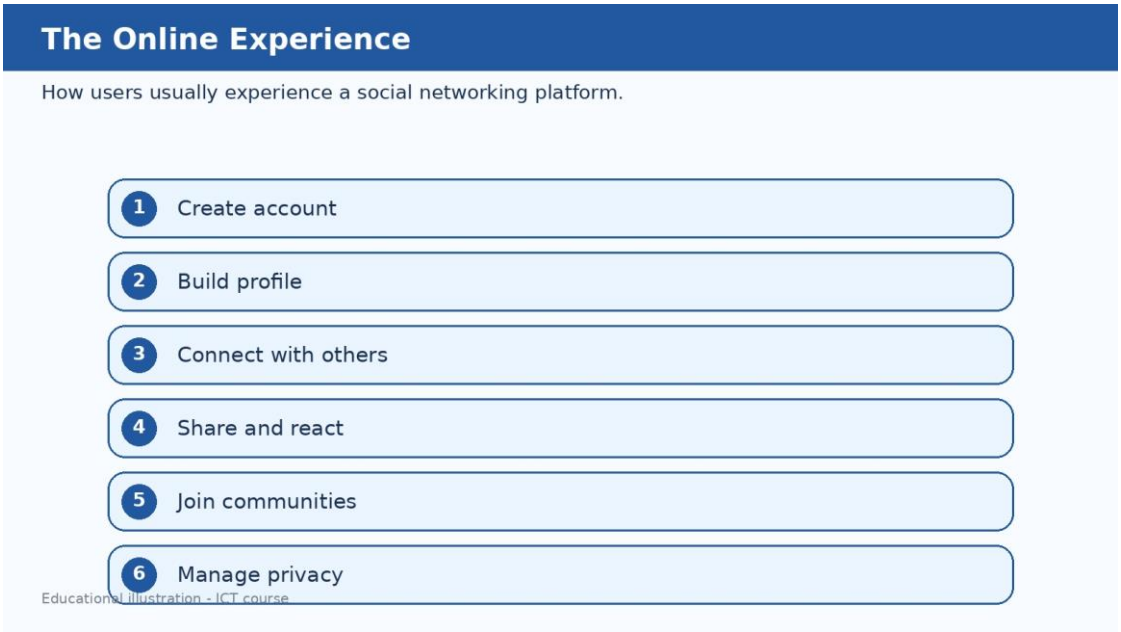


Figure 4. A typical user journey inside a social networking platform.

3.1 Account Creation and First Access

Most social networking sites require the user to create an account. This step usually includes providing a name, e-mail address or phone number, username, password, date of birth, and sometimes profile information. During account creation, the student should choose a strong password, avoid false personal information when it is not allowed, and read the privacy options carefully.

3.2 Interface Navigation

After signing in, the user sees the main interface. This may include a home page, news feed, menu, search bar, notifications, messages, profile icon, groups, and settings. Learning how to navigate this interface is essential because many privacy and security options are hidden inside menus.

3.3 Interaction and Participation

The online experience is interactive. Users can publish posts, react to content, comment, share links, send messages, join groups, follow pages, participate in live sessions, or create stories. These actions form a digital trace. For this reason, students should remember that online activity can influence their personal image, academic reputation, and future professional opportunities.

3.4 Personalization and Algorithms

Social networks often personalize the experience. The platform may recommend friends, groups, posts, videos, advertisements, or pages based on previous actions. This personalization can be useful because

it helps users discover relevant content, but it can also limit exposure to diverse viewpoints. Students should therefore learn to search actively and not depend only on what the platform recommends.

3.5 Digital Well-being

A healthy online experience requires balance. Excessive use of social networks can reduce concentration, waste time, and create pressure. Students should manage notifications, set time limits when necessary, avoid unnecessary arguments, and use social networks for useful communication, learning, and creativity.

4. User Profiles and Online Communities

User profiles and online communities are central elements of social networking sites. A profile represents the user, while a community brings users together around shared relationships, interests, goals, or activities. Understanding these two elements helps students manage their digital identity and participate responsibly online.

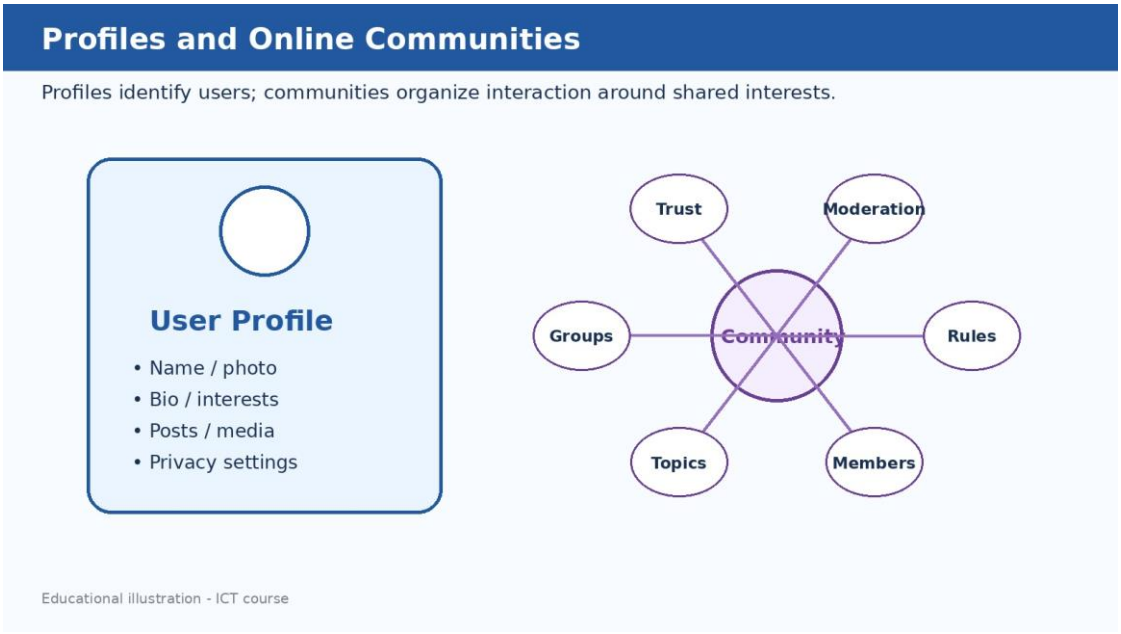


Figure 5. User profiles and communities organize social networking interaction.

4.1 User Profiles

A user profile is a digital identity page. It may include a profile photo, cover image, biography, contact information, education, profession, interests, posts, photos, videos, and links. Some profiles are personal, while others belong to institutions, public figures, companies, or student clubs.

A profile can be public, private, or semi-public depending on platform settings. Public profiles can be viewed by many people, while private profiles restrict access. Students should carefully manage visibility settings, especially for personal photos, contact information, and posts related to private life.

4.2 Digital Identity

Digital identity is the image of a person built through online information, activity, and interaction. It includes what the user publishes, what others publish about the user, profile details, comments, photos, likes, and shared content. A responsible digital identity should be respectful, coherent, and adapted to the user's academic or professional goals.

4.3 Online Communities

An online community is a group of users who interact regularly around a shared interest, goal, identity, or activity. Examples include student groups, alumni groups, professional communities, fan communities, research communities, local associations, and learning groups. Communities may be open to everyone or closed to selected members.

4.4 Community Rules and Moderation

Communities need rules. Rules clarify what is allowed and what is not allowed. Moderation is the process of applying these rules by approving posts, removing harmful content, answering reports, or guiding members. Good moderation protects members, improves discussion quality, and reduces misinformation, harassment, and spam.

4.5 Responsible Participation

- Read community rules before posting.
- Use respectful language even when disagreeing.
- Check information before sharing it.
- Do not publish private information about others without permission.
- Avoid spam, repeated posts, and irrelevant comments.
- Report harmful or suspicious content using platform tools.

5. Advanced Features of Social Networking Sites

Modern social networking sites include many advanced features that go beyond simple profiles and friend lists. These features are designed to increase interaction, organize content, recommend information, support communities, and help users manage their presence online.

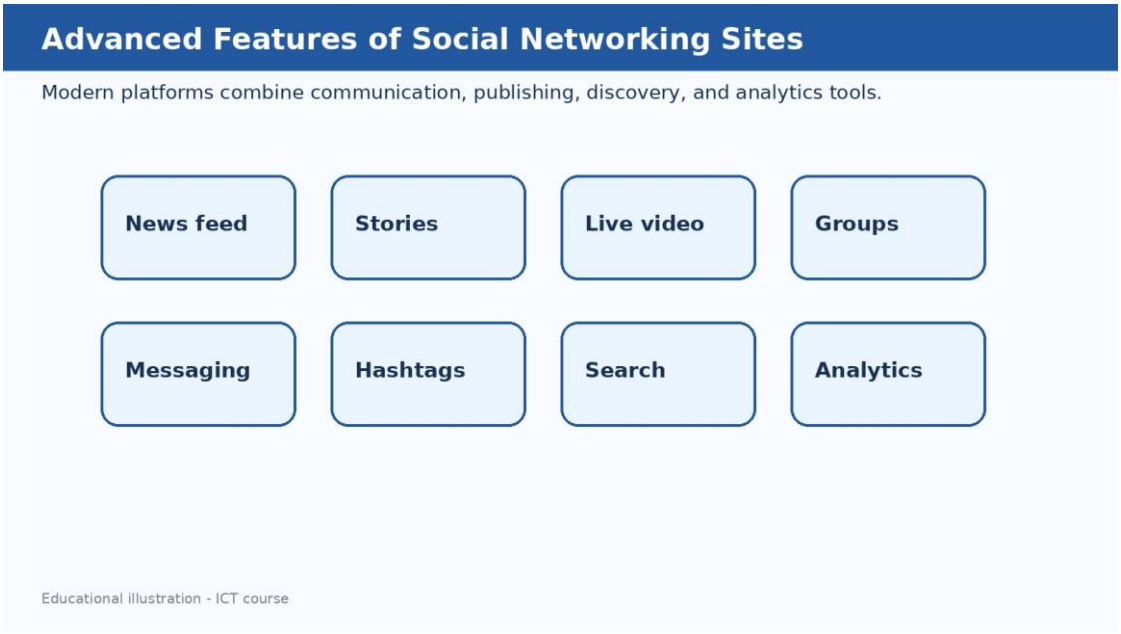


Figure 6. Common advanced features of social networking platforms.

5.1 News Feed

The news feed is a dynamic stream of posts, photos, videos, links, and updates. It is usually organized by algorithms that decide which content appears first. The feed helps users follow friends, pages, groups, trends, and recommended content.

5.2 Stories and Short-Lived Content

Stories are temporary posts that usually disappear after a short period. They are used for quick updates, informal communication, and visual storytelling. Students should still be careful because screenshots and reposts can make temporary content permanent.

5.3 Private Messaging

Private messaging allows direct communication between users. It may include text, voice messages, files, images, video calls, and group chats. Even private messages require respectful language and attention to privacy.

5.4 Groups and Pages

Groups organize users around common interests or activities. Pages are often used by institutions, brands, public figures, or organizations. In education, groups can support class communication, project coordination, and learning communities.

5.5 Hashtags and Search

Hashtags classify content around topics. Search tools help users find people, posts, pages, groups, and information. Hashtags can support learning and awareness campaigns, but students should verify the reliability of what they find.

5.6 Live Streaming

Live streaming allows users or organizations to broadcast video in real time. It can be used for conferences, lectures, announcements, interviews, product presentations, and cultural events.

5.7 Analytics and Insights

Many platforms provide analytics for pages and professional accounts. These tools show reach, engagement, audience demographics, impressions, and performance. They are useful for communication, marketing, public relations, and institutional visibility.

5.8 Privacy and Security Settings

Advanced platforms include privacy settings, blocking, reporting, two-factor authentication, login alerts, audience selection, and content visibility controls. These features help users protect their accounts and manage their online presence.

6. Early Pioneers of Social Networks

Social networking did not appear suddenly with Facebook or Instagram. It developed gradually through earlier websites and online communities. The history of social networks shows how digital communication moved from simple profiles and forums to complex platforms that combine identity, content, algorithms, and mobile access.

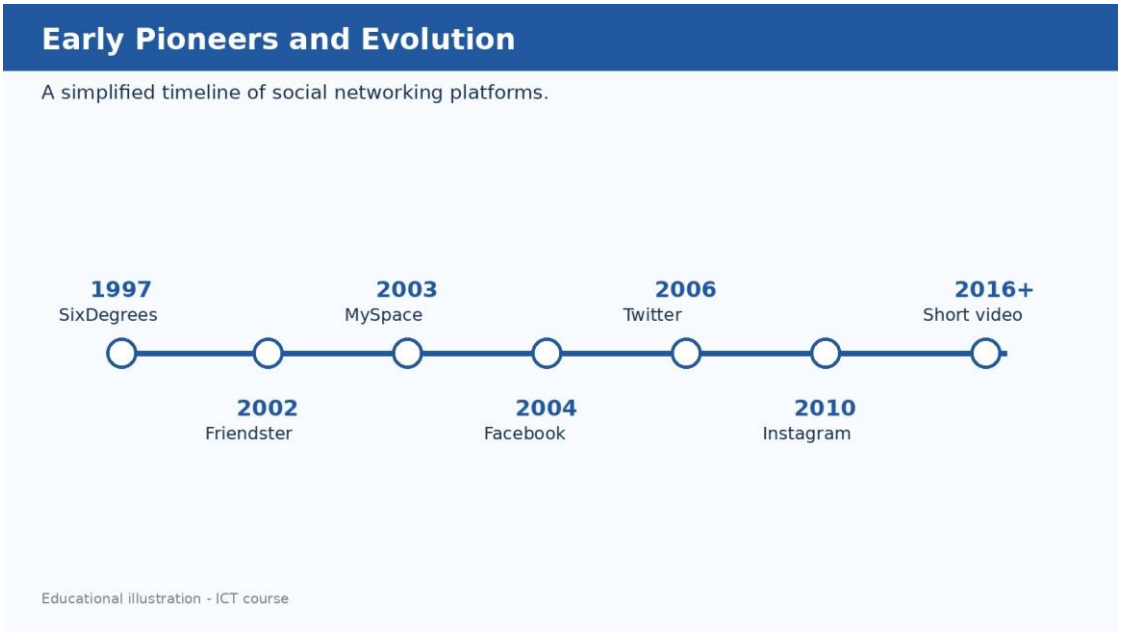


Figure 7. Simplified timeline of early pioneers and later developments.

6.1 Before Modern Social Networking Sites

Before modern social networking platforms, users interacted through bulletin board systems, forums, chat rooms, mailing lists, personal websites, and online communities. These spaces allowed users to exchange information and build relationships, but they did not always include visible friend lists or structured profile-based networks.

6.2 SixDegrees

SixDegrees, launched in 1997, is often mentioned as one of the first recognizable social networking sites because it allowed users to create profiles, list friends, and navigate connections. It introduced important ideas that became central to later platforms, even though it appeared before the mass adoption of broadband, smartphones, and modern web culture.

6.3 Friendster

Friendster, launched in 2002, popularized the idea of connecting through friends and friends-of-friends. It showed that online profiles could become social spaces and that users were interested in representing personal identity online. However, technical problems and competition limited its long-term success as a social network.

6.4 MySpace

MySpace, launched in 2003, became especially influential among young users, musicians, artists, and fan communities. It allowed profile customization and encouraged cultural expression. Its importance lies not only in the number of users it attracted, but also in the way it connected online identity with music, creativity, and youth culture.

6.5 Facebook and the Expansion of Social Networking

Facebook, launched in 2004, began in a university context and later expanded globally. It standardized many social networking practices such as real-name profiles, friend lists, news feeds, photos, pages, groups, and reactions. Its development influenced the design of many later platforms.

7. Social Networks in the 21st Century

In the 21st century, social networks became part of everyday life. Their development was accelerated by smartphones, mobile applications, high-speed Internet, cameras, cloud computing, and algorithmic recommendation systems. Social networks are now used for communication, entertainment, learning, journalism, marketing, activism, professional networking, and institutional communication.

7.1 Mobile Social Networking

The smartphone transformed social networks from websites visited occasionally into permanent mobile environments. Users can now publish photos, watch videos, send messages, join live events, and receive notifications at any time. This mobility increased participation but also created challenges related to attention, privacy, and digital well-being.

7.2 Visual and Video-Based Communication

Modern social networks rely heavily on images and videos. Visual communication is powerful because it is fast, emotional, and easy to share. Platforms such as Instagram, TikTok, Snapchat, and YouTube changed how users communicate, learn, advertise, and build public identity.

7.3 Professional and Academic Uses

Social networks are not only for entertainment. Students can use them to follow educational pages, participate in academic groups, share projects, build a professional portfolio, connect with institutions, and learn about opportunities. LinkedIn, research communities, and university pages are examples of professional and academic uses.

7.4 Institutional Communication

Universities, ministries, companies, and associations use social networks to communicate with the public. They publish announcements, promote events, answer questions, share achievements, and manage public image. For this reason, social networks have become important tools in public relations and organizational communication.

7.5 Risks and Challenges

Social networks also create risks. These include misinformation, fake accounts, cyberbullying, privacy loss, excessive use, manipulation, scams, and exposure to harmful content. A responsible user must verify information, protect personal data, respect others, and use privacy and security settings.

7.6 Digital Citizenship

Digital citizenship means using digital tools responsibly, ethically, and effectively. In social networks, digital citizenship includes respecting others, checking sources, avoiding hate speech, protecting privacy, reporting abuse, and understanding that online actions have real consequences.

8. Friendster and MySpace

Friendster and MySpace are important because they show how early social networking platforms experimented with identity, connections, online communities, and user-generated content. They also show that technological success depends not only on a good idea, but also on performance, usability, culture, innovation, and adaptation to users' needs.

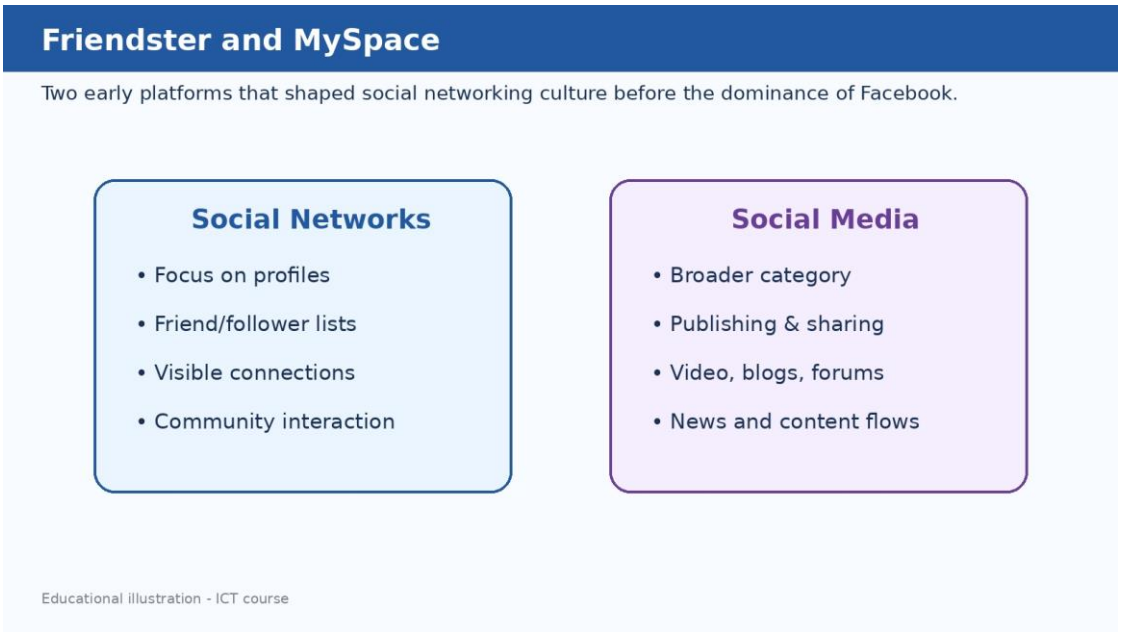


Figure 8. Friendster and MySpace helped shape early social networking culture.

8.1 Friendster

Friendster was launched in 2002 and became one of the first popular profile-based social networking sites. It allowed users to create profiles, connect with friends, and discover people through mutual connections. Its model demonstrated the social value of visible networks and helped popularize the idea of online identity connected to real social relationships.

Friendster faced difficulties as its popularity increased. Slow performance, technical limitations, and competition from newer platforms affected user satisfaction. Its history is useful for students because it shows that digital platforms must be technically reliable and socially attractive at the same time.

8.2 MySpace

MySpace was launched in 2003 and became one of the most influential social networking platforms of the early Web 2.0 period. It allowed users to customize their profiles, share music, connect with artists, and express personal identity. For many young users, MySpace was a space of creativity, music discovery, and online social life.

MySpace was especially important for musicians and cultural communities. Bands and artists could create pages, share songs, announce events, and build audiences. This helped connect social networking with cultural production and digital promotion.

8.3 Comparison Between Friendster and MySpace

Criterion	Friendster	MySpace
Launch period	2002	2003
Main identity	Friend-based social discovery	Profile customization and youth culture
Important contribution	Popularized visible social connections	Linked social networking with music and self-expression
User experience	Profiles and friend networks	Highly customizable profiles, music pages, comments
Main lesson	Technical performance matters	Culture and creativity can drive adoption

Conclusion

Social networks are digital platforms that organize communication around profiles, relationships, and interaction. They are part of the broader social media ecosystem, but they focus especially on visible connections between users. Their importance comes from their ability to support communication, identity expression, community building, learning, public debate, and professional visibility.

This lecture explained the definition of social networks, the difference between social networks and social media, the online experience, user profiles, communities, advanced features, historical pioneers, and the specific role of Friendster and MySpace. The main lesson is that social networks are not neutral spaces. They shape how people present themselves, how information circulates, and how communities are formed.

For students, social networks should be used with intelligence and responsibility. They can support learning, creativity, professional development, and communication, but they also require privacy awareness, critical thinking, respectful behavior, and digital citizenship.

Practical Activities

Activity 01: Identify the Elements of a Social Network

Choose one social networking platform you know. Identify its profile elements, connection tools, publishing tools, privacy settings, and community features.

Activity 02: Social Networks vs Social Media

Complete a comparison table between a social networking platform and a video-sharing platform. Explain which one focuses more on relationships and which one focuses more on content.

Activity 03: Analyze a User Profile

Create a checklist of what makes a student profile professional and safe. Include profile photo, biography, privacy settings, posts, comments, and contact information.

Activity 04: Historical Timeline

Prepare a timeline that includes SixDegrees, Friendster, MySpace, Facebook, Twitter/X, Instagram, Snapchat, TikTok, and LinkedIn. Add one key feature for each platform.

Evaluation Questions

- Define social networks in your own words.
- What are the three main elements of social network sites according to the academic definition?
- Explain the difference between social networks and social media.
- Give three examples of social networking platforms and three examples of broader social media platforms.
- What is meant by the online experience?
- Why are user profiles important in social networking sites?
- What is an online community? Give two examples.
- Mention five advanced features of modern social networking sites.
- Why are Friendster and MySpace important in the history of social networks?
- What are the main risks related to social networks, and how can students use them responsibly?

Key Terms

Term	Definition
Social network	An online platform based on profiles, connections, and interaction between users.
Social media	A broad category of digital platforms that allow users to create, share, and interact with content.
User profile	A digital representation of a person, organization, or group.
Online community	A group of users who interact around shared interests, goals, or identities.
News feed	A stream of content organized by the platform and often personalized by algorithms.
Hashtag	A keyword preceded by the # symbol used to classify and search content.
Digital identity	The image of a person built through online information and activity.

Digital citizenship	Responsible, ethical, and effective participation in digital environments.

LECTURE 04: Social Media

1- Social Media

Social media is a form of mass media communications on the Internet (such as on websites for social networking and microblogging) through which users share information, ideas, personal messages, and other content (such as videos). Social networking and social media are overlapping concepts, but social networking is usually understood as users building communities among themselves, while social media is more about using social networking sites and related platforms to build an audience.

The earliest forms of social media appeared almost as soon as technology could support them. E-mail and chat programs debuted in the early 1970s, but persistent communities did not surface until the creation of the discussion group network USENET in 1979. USENET allowed users to post and receive messages within subject areas called newsgroups. USENET and other discussion forums, such as privately hosted bulletin board systems (BBSs), enabled individuals to interact, but each was a closed system essentially. With the release in 1993 of the Mosaic web browser, those systems were joined with an easy-to-use graphical interface. The architecture of the World Wide Web made it possible to navigate from one site to another with a click, and faster Internet connections allowed for more multimedia content than could be found in the text-heavy newsgroups.

The first companies to create social networks based on web technology were Classmates. com and Six Degrees. com. Classmates. com, founded in 1995, used an aggressive pop-up advertising campaign to draw web surfers to its site. It based its social network on the existing connection between members of high school and college graduating classes, armed service branches, and workplaces. Six Degrees. Com was the first true social networking site. It was launched in 1997 with most of the features that would come to characterize such sites: members could create profiles for themselves, maintain lists of friends, and contact one another through the site's private messaging system. Six Degrees. com claimed to have attracted more than three million users by 2000, but it failed to translate those numbers into revenue and collapsed with countless other dot-coms when the "bubble" burst that year for shares of e-commerce companies.

Nevertheless, social media sites became popular in the early 21st century. Social networks such as Friendster and MySpace emerged, which allowed family members, friends, and acquaintances to connect online. Those two sites were eventually supplanted by Facebook, which became one of the world's most popular social media sites with billions of users worldwide. Other forms of social media

emerged for the sharing of specific types of content. For example, YouTube allows users to share videos, and TikTok is specifically designed for the sharing of short videos. LinkedIn emphasizes a user's professional connections, where users create pages similar in structure to résumés.

Concerns over the possible negative effects of social media are also growing in tandem with the burgeoning technology. For example, some observers suggest that social media sites spur greater schadenfreude, the emotional experience of pleasure in response to another's misfortune, perhaps as a result of the dehumanization that occurs when interacting through screens on computers and mobile devices. Some studies also suggest a strong tie between heavy social media use and increased depression, anxiety, loneliness, suicidal tendencies, and feelings of inadequacy. During his second tenure as U. S. surgeon general, Vivek Murthy raised concerns about social media's impact on children, and in 2024, he suggested mandated warning labels on social media sites.

2- Requirements of self-government

One critical source of the contemporary repudiation of censorship in the West depends on something that may be distinctive to modernity, an emphasis on the dignity of the individual. This respect for individuality has its roots both in Christian doctrines and in the (not unrelated) sovereignty of the self-reflected in state-of-nature theories about the foundations of social organization. Vital to this approach is the general opinion about the nature and sanctity of the human soul. This general opinion provides the foundation of a predominantly new, or modern, argument against censorship against anything, in fact, that interferes with self-development, and especially such self-development (or, better still, "self-fulfillment") as a person happens to want and to choose for himself. This can be put in terms of liberty, the liberty to become and to do what one pleases.

The old, or traditional, argument against censorship was much less individualistic and much more political in its orientation, making more of another's sense of liberty. According to that sense, if a people is to be self-governing, it must have access to all information and arguments that may be relevant to its ability to discuss public affairs fully and to assess in a competent manner the conduct of the officials it chooses. Thus, "freedom of speech," which is constitutionally guaranteed to the people of the United States, first comes to view in Anglo-American legal history as a guarantee for the members of the British Parliament assembled to discuss the affairs of the kingdom.

In the circumstances of a people actually governing itself, it is obvious that there is no substitute for freedom of speech and of the press, particularly as that freedom permits an informed access to information and opinions about political matters. Even the more repressive regimes today recognize

this underlying principle, in that their ruling bodies try to make certain that they themselves become and remain informed about what is "really" going on in their countries and abroad, however repressive they may be in not permitting their own people to learn about and openly to discuss public affairs. Whether anyone who thus rules unjustly, or otherwise improperly, can be regarded as truly understanding and hence truly controlling his situation is a question not limited to these circumstances.

"Freedom of expression"

The shift from the more political to the more individualistic view of liberty may be seen in how the constitutional guarantees with respect to speech and the press are typically spoken of in the United States. Restraints upon speaking and publishing, and indeed upon action generally, are fewer now than at most times in the history of the country. This absence of restraints is reflected as well in the very terms in which these rights and privileges are described. What would once have been referred to as "freedom of speech and of the press" (drawing upon the language of the First Amendment to the Constitution of the United States) is now often referred to as "freedom of expression."

To make much of freedom of expression is to encourage a liberation of the self from the constraints of the community. It may even be to assume that the self has, intrinsic to it or somehow available to it, independent of any social guidance, intimations of what it is and what it wants. Thus, liberation may be seen in the desire of most people to be free to pursue their own goals and life plans, which may involve a reliance upon standards and objectives that are solely their own. It is tempting, in such circumstances, to adopt a radical subjectivism that tends to result in a thoroughgoing relativism with respect to moral and political judgments. One consequence of this approach is to identify an ever-expanding array of forms and media of expression that are entitled to immunity from government regulation including not only broadcast and print media (books and newspapers) but also text messaging and Internet media such as blogs, social networking sites, and e-commerce sites.

On the other hand, if the emphasis is placed upon the more traditional language, "freedom of speech and of the press," the requirements and prerogatives of a self-governing people are apt to be made more of. This means, among other things, that a people must be prepared and equipped to make effective use of its considerable political power. (Even those rulers who act without the authority of the people must take care to shape their people in accordance with the needs and circumstances of their regime. This kind of effort need not be altogether selfish on the part of such rulers, since all regimes do have an interest in law and order, in common decency, and in a routine reliability or loyalty.) It should be evident that a people entrusted with the power of self-government must be able to exercise

a disciplined judgment: not everything goes, and there are better and worse things awaiting the community and its citizens.

What is particularly difficult to argue for, and to maintain, is an arrangement that, while it leaves a people clearly free politically to discuss all matters of public interest with a view toward governing itself, routinely prepares that same people for an effective exercise of their considerable freedom. In such circumstances, there are some who would take the case for, and the rhetoric of, liberty one step further, insisting that no one should try to tell anyone else what kind of person he should be. There are others, however, who maintain that a person is truly free only if he knows what he is doing and chooses to do what is right. Anyone else, in their view, is a prisoner of illusions and appetites, however much he may believe that he is freely expressing himself.

There are, then, two related sets of concerns evident in any consideration of the forms and uses of censorship. One set of concerns has to do with the everyday governance of the community; the other, with the permanent shaping of the character of the people. The former is more political in its methods, and the latter is more educational.

CHAPTER 05: MOOCs and Open Online Learning

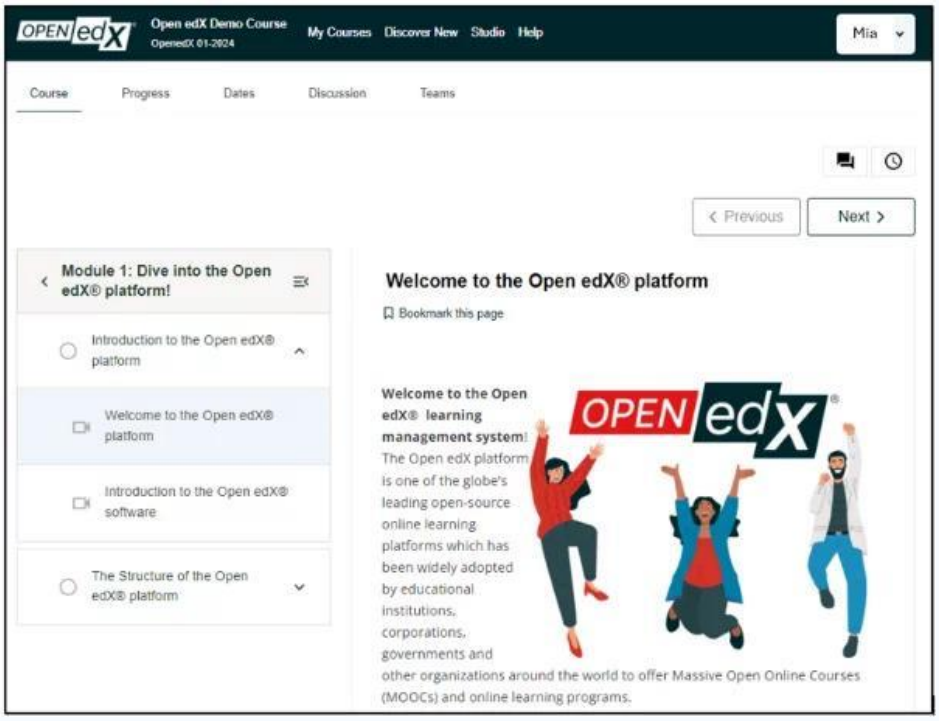
Learning objectives

- **Define MOOCs and identify their main characteristics.**
- **Distinguish between cMOOCs and xMOOCs.**
- **Explain the pedagogical importance of MOOCs in higher education.**
- **Recognize examples of international and open-source MOOC platforms.**

1. Definition and main characteristics of MOOCs

A MOOC, or Massive Open Online Course, is an online course designed to be accessible to a large number of learners through the Internet. MOOCs generally provide video lectures, reading resources, quizzes, discussion forums, peer activities, and sometimes certificates of completion. Their main characteristics are openness, flexibility, scalability, and learner autonomy.

In the context of higher education, MOOCs allow students to access knowledge beyond the physical classroom. They support lifelong learning and give learners the possibility to study according to their own rhythm, especially when the learning materials remain available online.



2. Types of MOOCs: cMOOC and xMOOC

Two main types of MOOCs are commonly distinguished: cMOOCs and xMOOCs. A cMOOC is based on connectivist learning, where students learn through interaction, collaboration, resource sharing, and networked knowledge construction. In this model, the teacher is less a transmitter of content and more a facilitator of learning communities.

An xMOOC is more structured and closer to a traditional online course. It usually includes organized video lectures, quizzes, automatic assessment, readings, and a clearly defined progression. Most large international MOOC platforms mainly use the xMOOC model because it is easier to scale and manage for thousands of learners.

3. Importance of MOOCs in higher education

MOOCs are important in higher education because they support access to learning resources, academic openness, flexible training, and internationalization. They may help students develop digital skills, language skills, professional skills, and autonomous learning strategies. They also allow universities to share expertise with a wider audience and to enrich face-to-face teaching through blended learning.

For first-year university students, MOOCs can be used as complementary resources. A teacher may guide students toward selected MOOC units, ask them to summarize what they learned, or integrate MOOC videos and quizzes into classroom activities.

4. Examples of MOOC platforms: Coursera, edX, Future Learn, and Open edX

There are several international MOOC platforms. Coursera offers courses from universities and companies in many fields. edX provides university-level courses and professional programs. Future Learn is known for its social learning approach and short online courses. Open edX is an open-source platform that institutions can install and customize to create their own MOOC environment.

CHAPTER 06: Learning Management Systems and Moodle

Learning objectives

- **Define the concept of a Learning Management System.**
- **Explain how Moodle functions as a university e-learning platform.**
- **Guide students in accessing courses and downloading resources.**
- **Describe assignment submission, forums, and online quizzes.**

1. Definition of a Learning Management System

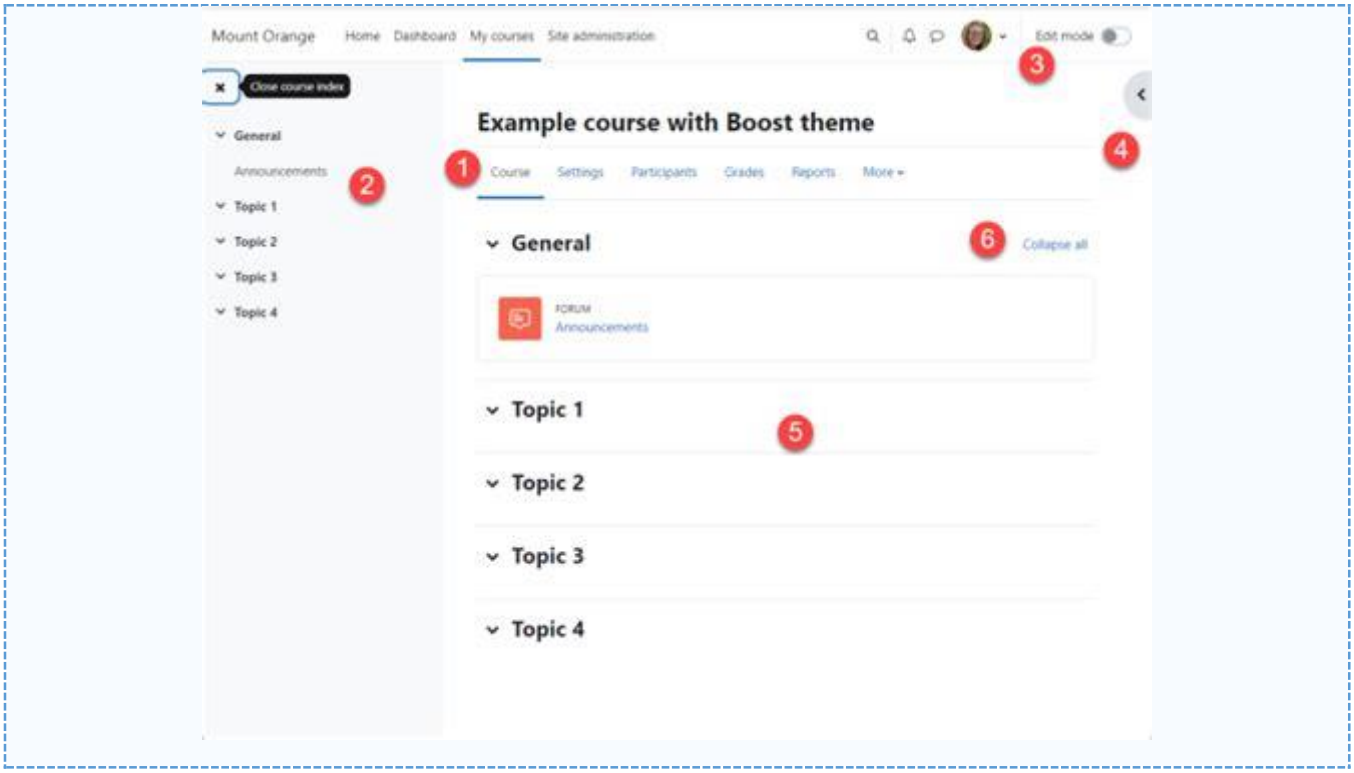
A Learning Management System, commonly called LMS, is a digital platform used to organize, deliver, manage, and evaluate online or blended learning. It allows teachers to create course spaces, upload resources, communicate with students, collect assignments, design quizzes, and follow learners' progress.

An LMS is not only a storage space for files. It is a pedagogical environment where learning activities can be planned, sequenced, and assessed. It helps connect the teacher, the student, the course content, and the evaluation process within one organized digital space.

2. Moodle as a university e-learning platform

Moodle is one of the most widely used open-source learning management systems in universities. It allows teachers to create structured online courses containing lectures, PDF files, links, videos, forums, assignments, quizzes, attendance activities, and feedback tools.

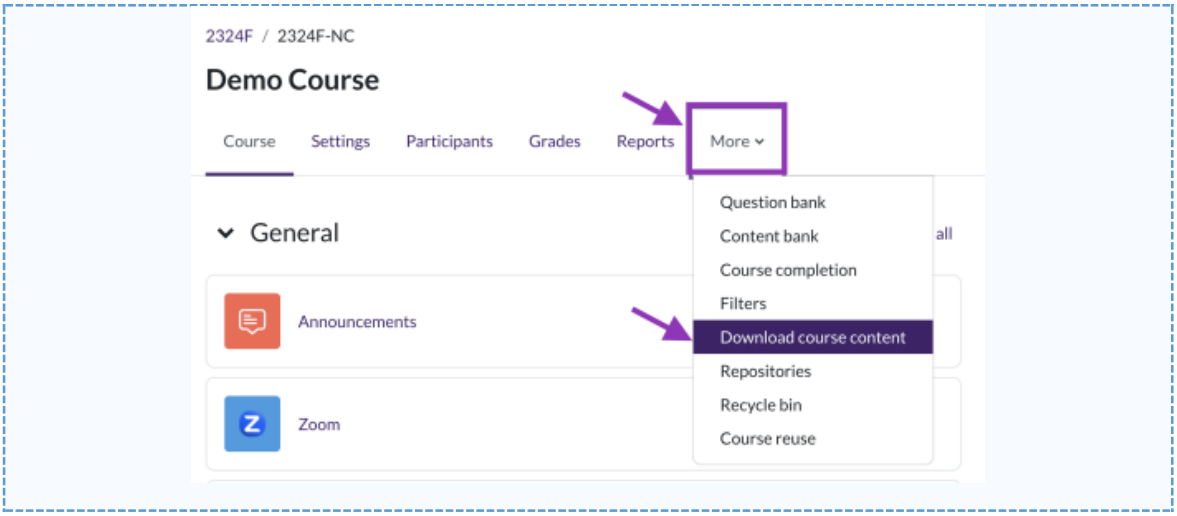
In a university context, Moodle supports both face-to-face teaching and distance learning. It can be used to distribute course materials, receive student work, organize online tests, and maintain communication outside the classroom.



3. Accessing courses and downloading resources

To use Moodle, students generally need a username and a password provided by the institution. After logging in, they can access their dashboard, select the course, and consult the resources uploaded by the teacher. These resources may include lecture notes, presentations, links, videos, and additional readings.

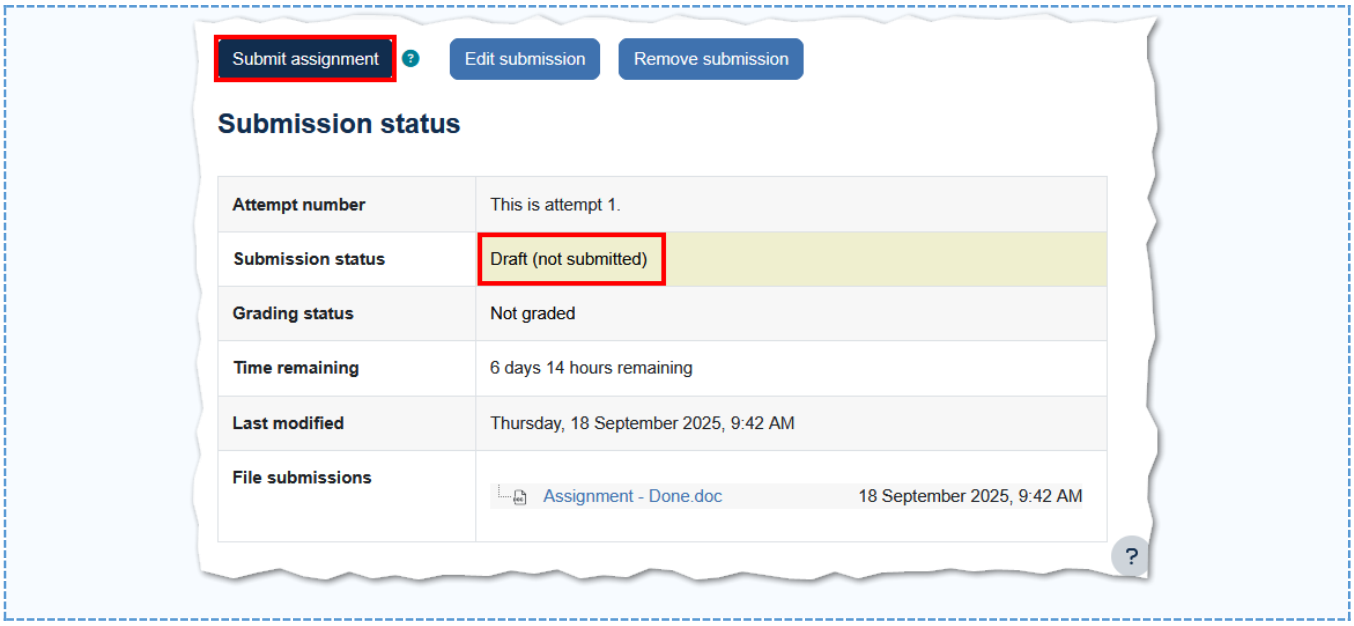
Downloading resources is usually done by clicking on the file or link provided in the course section. Students should organize downloaded documents carefully and respect the teacher’s instructions concerning deadlines and required activities.

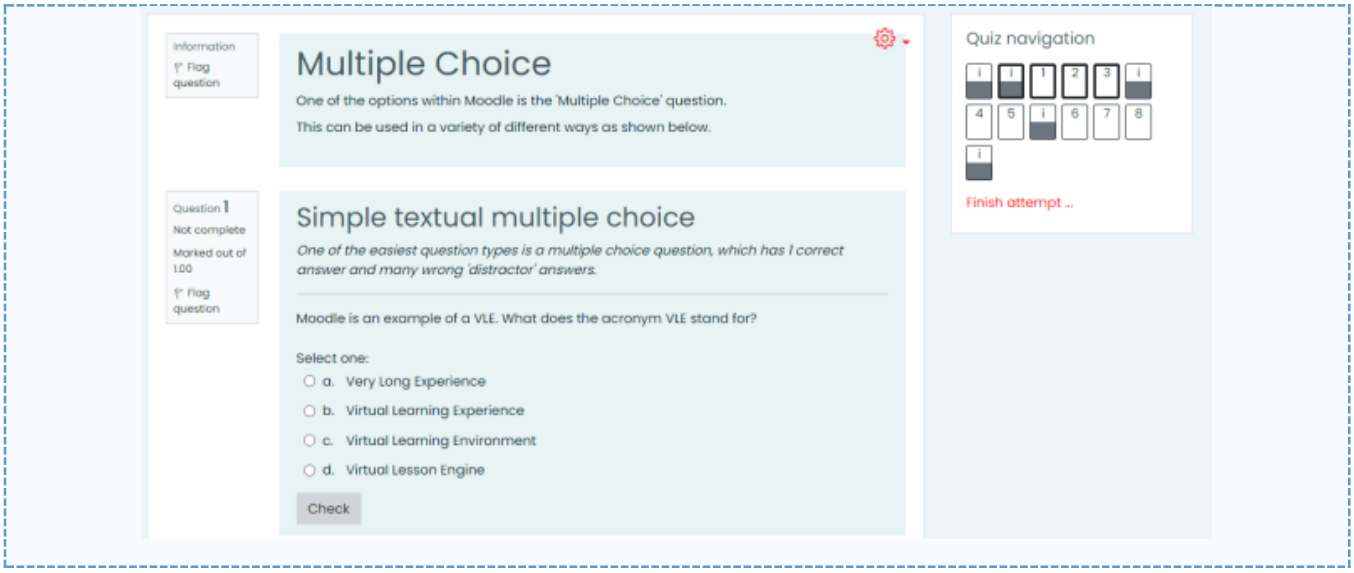


4. Submitting assignments, forums, and online quizzes

Moodle allows students to submit assignments online. The teacher may request a Word file, a PDF document, a presentation, or another type of file. Students should check the submission deadline, file format, and instructions before uploading their work.

Forums are used for academic discussion, questions, announcements, and collaborative learning. Quizzes can include multiple-choice questions, short answers, matching questions, true/false questions, and other formats. They may be used for practice, continuous assessment, or final evaluation, depending on the teacher's pedagogical design.




Information
Flag question
Multiple Choice
One of the options within Moodle is the 'Multiple Choice' question.
This can be used in a variety of different ways as shown below.
Question 1
Not complete
Marked out of 1.00
Flag question
Simple textual multiple choice
One of the easiest question types is a multiple choice question, which has 1 correct answer and many wrong 'distractor' answers.
Moodle is an example of a VLE. What does the acronym VLE stand for?
Select one:
a. Very Long Experience
b. Virtual Learning Experience
c. Virtual Learning Environment
d. Virtual Lesson Engine
Check
Quiz navigation
Finish attempt ...

CHAPTER 07: Artificial Intelligence in E-Learning

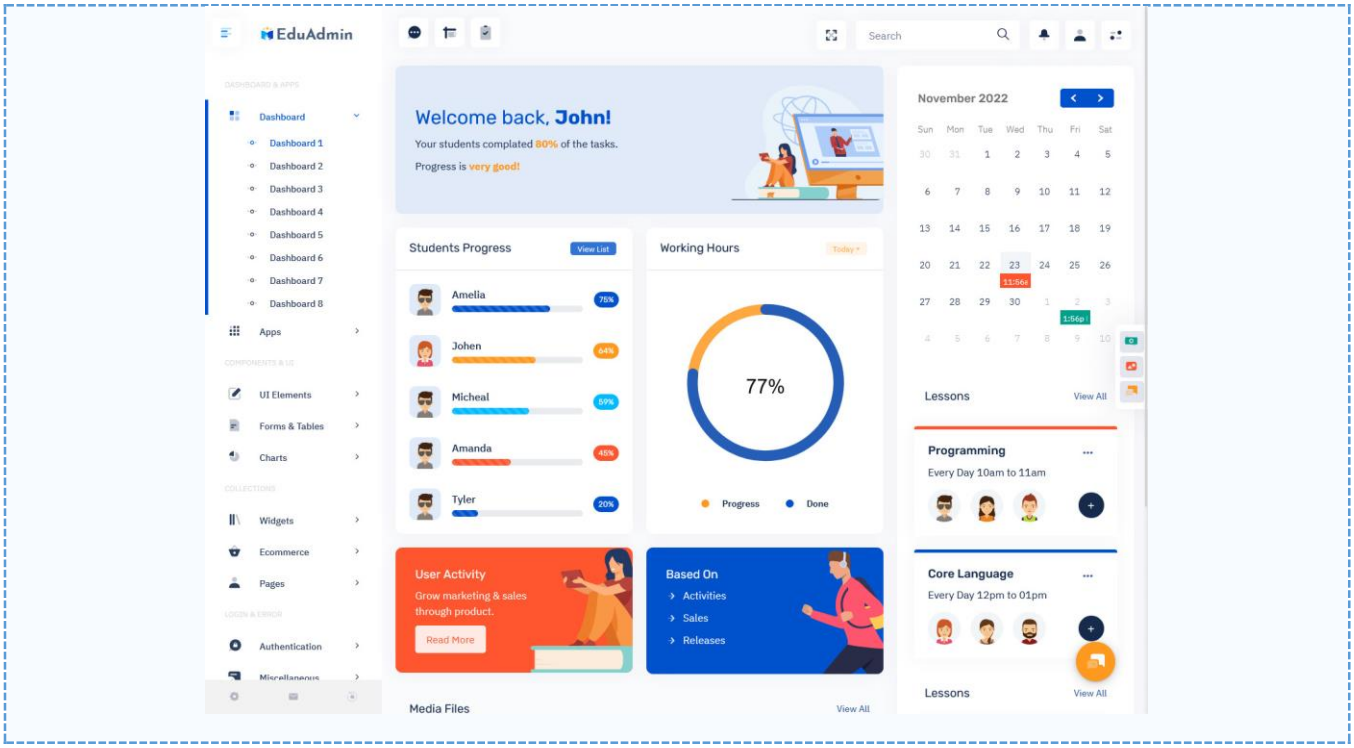
Learning objectives

- **Explain the relationship between artificial intelligence and adaptive learning.**
- **Identify intelligent tutoring systems and automatic feedback mechanisms.**
- **Recognize AI tools used for academic writing, translation, and learning support.**
- **Discuss ethical issues related to AI in education.**

1. Artificial intelligence and adaptive learning

Artificial intelligence in e-learning refers to the use of computer systems capable of analyzing learner data, adapting learning paths, generating feedback, and supporting personalized education. Adaptive learning systems can adjust the difficulty of activities according to the learner's performance and needs.

In practice, AI can help identify students' weaknesses, recommend suitable resources, personalize exercises, and provide immediate correction. This makes learning more flexible and more responsive to individual differences.



2. Intelligent tutoring systems and automatic feedback

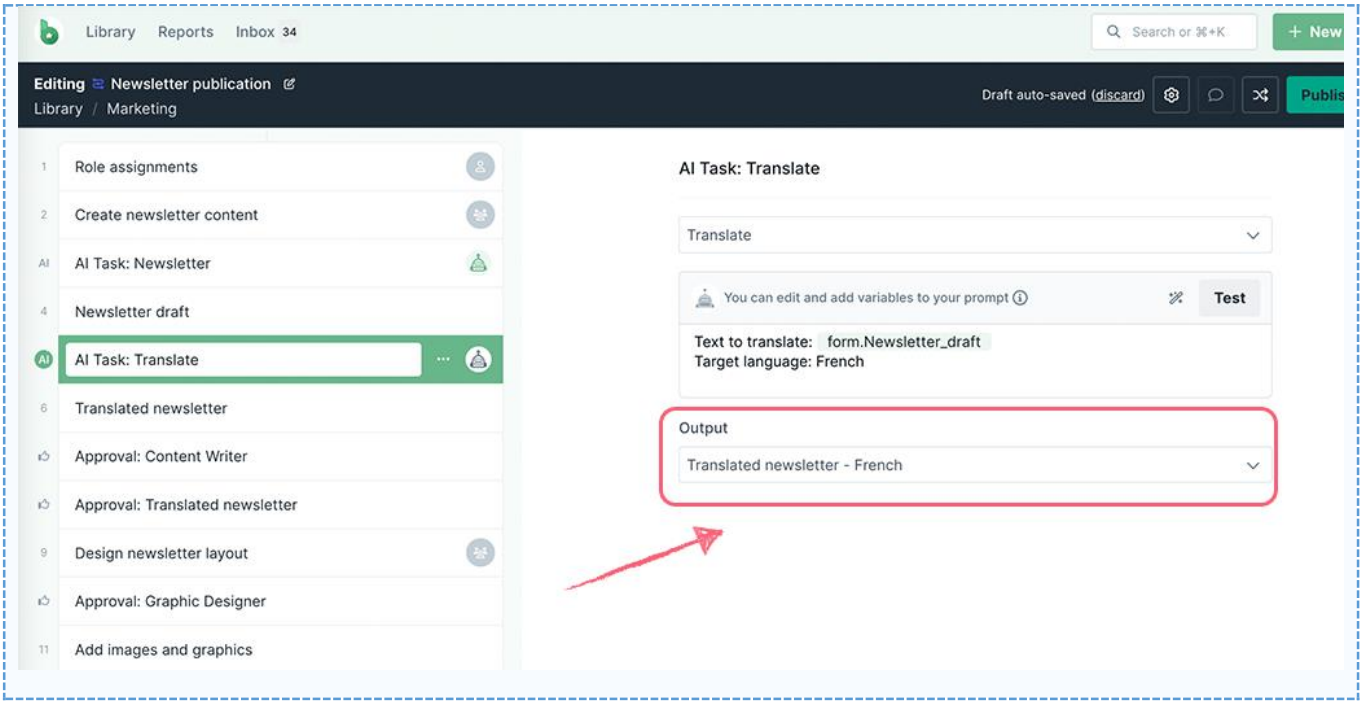
An intelligent tutoring system is a digital learning environment that provides guidance similar to a tutor. It may present explanations, ask questions, analyze answers, detect errors, and propose remediation activities. Such systems can be useful when students need repeated practice or individual support.

Automatic feedback is one of the most important uses of AI in e-learning. It allows learners to receive quick responses on quizzes, grammar exercises, pronunciation attempts, writing tasks, or coding activities. However, teacher supervision remains essential to ensure accuracy and pedagogical relevance.

3. AI tools for academic writing, translation, and learning support

AI tools can support students in academic writing, translation, summarization, brainstorming, grammar checking, vocabulary development, and research organization. For language learning, AI may help students practice dialogue, improve pronunciation, understand difficult texts, and receive explanations adapted to their level.

These tools should be used responsibly. They can help students learn better, but they should not replace personal effort, critical thinking, academic honesty, or teacher guidance.



4. Ethical issues related to AI in education

The use of artificial intelligence in education raises several ethical issues, including privacy, data protection, transparency, plagiarism, overdependence on automated tools, and unequal access to technology. Students should understand that AI-generated answers may contain errors and should always be verified.

A responsible use of AI requires clear rules, teacher guidance, respect for academic integrity, and the development of students' critical digital literacy. The objective is not to replace learning, but to improve it through intelligent and ethical support.

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ATTACHMENTS

Effectiveness of Online Platforms in Developing Language Skills of Higher Education Students

La eficacia de las plataformas online para el desarrollo de las competencias lingüísticas de los estudiantes universitarios

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Abstract

The purpose of this study was to determine the effectiveness of using online platforms, including Duolingo, Babbel, and Moodle, in developing various English language skills of students. A controlled experimental design was used. Based on purposive sampling,180 students were included in the study and divided into an experimental group (using online platforms, n = 90) and a control group (studying using the traditional system, n = 90).

The experiment lasted a total of 12 weeks. Students' performance was assessed using standardized pre- and post- tests that consisted of reading, listening, writing, speaking, vocabulary, and grammar tasks. Statistical analysis included paired and independent t-tests and calculation of the effect size. All online platforms provided improvement in language skills compared to the control group. The effect sizes mostly exceeded 0.8. This result demonstrated the practical significance of the platforms. Thus, the findings showed that online platforms can improve the effectiveness of English language learning in higher education institutions. Each platform has its advantages, which confirms the feasibility of blended learning.

Keywords: Duolingo, English language skills, Moodle, Babbel, online platforms.

Resumen

El objetivo de este estudio es determinar la eficacia del uso de las plataformas en línea Duolingo, Babbel y Moodle para desarrollar habilidades lingüísticas en inglés en los estudiantes. Se utilizó un diseño experimental controlado. A partir de un modelo teórico, se incluyeron 180 estudiantes, que se dividieron en un grupo experimental (que utilizó plataformas en línea, n = 90) y un grupo de control (que estudió utilizando el sistema tradicional, n = 90). El experimento duró 12 semanas en total. El rendimiento de los estudiantes se evaluó mediante pruebas estandarizadas previas y posteriores que consistían en tareas de lectura, comprensiónauditiva, expresiónescrita, expresión oral y vocabulario. El análisisestadísticoincluyópruebas t pareadas e independientes y el cálculodeltamañodelefecto. Todas las plataformas en línea proporcionaron una mejora en las habilidadeslingüísticas en comparación con el grupo de control. El tamañodelefectosuperóensumayoríael 0,8. Esteindicadordemostrólaimportanciaprácticadelasplataformas. Así, los result a dos most raron que las plataformas en línea pueden mejorar la eficaciadelaprendizajedelinglésen las instituciones de educaciónsuperior. Cada plataforma tiene sus ventajas, lo que confirma la vía bilateral de la relación a je mix to.

Palabras clave: Duolingo, habilidades lingüísticas en inglés, Moodle, Babbel, plataformas en línea.

Introduction

Technological progress and the proliferation of digital resources have transformed existing traditional teaching methods. Flexible, interactive, and personalized language learning has become a common phenomenon in modern universities (Sushant et al., 2024). In Ukraine, the relevance of implementing online platforms has particularly increased against the backdrop of the COVID-19 pandemic and

subsequently the full-scale war (Turchyn et al., 2023). Moreover, online learning has become important due to current reforms in education, which involve the active digitalization of the learning process. Despite the widespread implementation of online tools, there is a need for an objective assessment of their effectiveness in developing key language skills: speaking, writing, reading, and listening, compared to traditional teaching methods. The issue of the effectiveness of modern online platforms for students' performance in language acquisition is of particular scientific interest.

Besides, despite the current popularity of platforms such as Duolingo, Moodle, Quizlet, and others, there is a limited number of empirical studies in the scientific discourse (Hidalgo-Camacho et al., 2021; Kurebay et al., 2023) that focus on the impact of these resources on language competence, specifically among Ukrainian university students. Additionally, many studies focus on the use of online platforms in secondary education, as this is the environment where digital gamification is actively employed (Bazyl et al., 2025; Stanley & Fortunato, 2022). Thus, there is a significant gap in the study of their actual effectiveness within the modern higher education system.

This study aims to determine the effectiveness of online platforms in improving language skills amongst students in Ukrainian higher education institutions who are learning English as a foreign language.

The main tasks include:

26. 1. Determining the level of language skills before and after the experiment using a standardized language test.
27. 2. Conducting an experimental verification of the effectiveness of using online platforms in the process of developing students’ language skills.
28. 3. Formulating recommendations on the feasibility of integrating online platforms into the educational process for English language teachers in higher education institutions in Ukraine.

The following hypotheses are put forward:

H 1. Students who systematically use online platforms for language learning demonstrate a higher level of improvement in their language skills compared to those who study using traditional methods.

H 2. Different platforms have varying effectiveness in developing specific language skills (Duolingo for listening, Moodle for reading and writing).

The study's scope encompasses university students in Ukraine who are learning English as a foreign language, with a focus on the use of platforms such as Duolingo, Moodle, and other popular digital resources.

Literature Review

The use of modern online platforms for learning foreign languages (e. g., Duolingo, Coursera, specialized LMS, andother mobile applications) has combined several key features: the application of gam if i cation (a set scoring system, levels, badges), adaptive learning (personalized exercises based on user behavior methods), certain aspects of multimedia content (audio, video, interactive exercises), effective spaced repetition systems, as well as progress analytics and real-time feedback. These functions theoretically allow the implementation of modern methodological principles by increasing

the frequency of contact with language material, lowering barriers to daily practice, and enabling the individual iz ation of the learning pace (Essafi et al., 2024). The development of practical implementations of adaptive algorithms and memory models (e. g., spaced repetition models) has demonstrated the effectiveness of such approaches for subsequent improvement of memorization, vocabulary expansion, and identification of weaknesses in students' preparation.

A significant number of studies have shown the positive impact of online tools on individual components of language competence (Andino Paredes et al.,2025; Escobar Fandiñoetal,2019). First and foremost, it's worth noting aspects such as vocabulary memorization, motivation, and accessibility of learning (Martínez-Cerdá et al., 2018). For example, in some empirical studies, theuseof Duo lingo and other similar applications has led to an increase in learners' vocabulary and overall motivation, especially when the applications were used as a supplement to classroom instruction (Solmaz, 2024; Remache Carrillo et al., 2021). Researchers also noted that spaced repetition systems and adaptive tasks significantly increased the duration of lexical units retained in memory (Ludwig et al., 2023). Along with the positive results, researchers have repeatedly pointed out existing limitations: many platforms can be effectively used in the areas of reading/vocabulary/grammar, but they have weak capabilities for developing oral communication (free speech, intonation, and real interaction with native speakers). Scientists have also noted that automated exercises do not always develop comprehensive communication skills and require teacher facilitation and integration with live practices (Kessler et al., 2023; Ferri et al., 2020). Furthermore, there were issues in the areas of differentiated access (the digital divide), the quality of educational content, and long-term effectiveness (Okoye et al., 2022; Wen & Hu, 2018). The proposed challenges were also explored in Ukraine. A review of Ukrainian scientific literature demonstrated an increase in the number of works on distance and online language learning in higher education settings, primarily in the form of case studies, student surveys, and descriptive studies of e-learning usage. Ukrainian research has documented the significant role of digital platforms in ensuring the continuity of learning during the pandemic and military actions. Positive student feedback on the flexibility and accessibility of online tools was also noted. Besides,

difficulties with integrating speaking practice and technical/organizational barriers have been identified (Pylypenko & Kozub, 2021). For example, research analyzing the use of e-learning in higher education and case studies of distance learning English/other languages in Ukrainian universities have demonstrated the high effectiveness of this approach.

Despite the existing descriptive and quasi-experimental studies, there is still a lack of clearly controlled experimental research comparing the effectiveness of specific online platforms and traditional face-to-face methods of working with learners (Nicolalde Gonzálezetal,2025; De Wit&Altbach,2020), including those regarding higher education students in Ukraine. Many existing publications (primarily Ukrainian ones) are case studies, surveys, or mixed research designs. Therefore, there is a lack of sufficient research with strong quantitative data (e. g., pre/post-tests with control groups, long-term retention analysis) to draw definitive conclusions about the advantages or disadvantages of online platforms in higher education, specifically within the Ukrainian context. These and other gaps justified the need for further experimental comparisons, particularly focusing on the development of oral speech and the integration of platforms into credit-module programs.

At the same time, the problem of the effectiveness of digital resources in teaching foreign languages is not only local, but also global. Even though this pr oboe mati csis actively researched in the countries of the European Union, the USA, and Asia, the results remain ambiguous. Thus, the Ukrainian experience, conditioned by the challenges of war and active educational reforms, can make a significant contribution to the international scientific discourse. The results obtained will have practical significance not only for domestic higher education institutions, but also for the educational systems of other countries that integrate digital platforms or operate in conditions of crisis transformations.

For the proposed empirical study, several theoretical approaches can be combined, including Krashen's Input Hypothesis and Vygotsky's Zone of Proximal Development. The first approach allowed the study to emphasize the importance of well-supported, understandable input material. The second shifted the focus to social interaction and support. The combination of these theoretical approaches made it possible to explain the potential of certain platform features (adaptability, frequent repetition, feedback, simulation of communicative contexts).

Methodology

Research Design

This study is a controlled experimental study that involves comparing the performance of an experimental group (students using online platforms for language learning) and a control group (students learning using traditional methods). This approach is suitable for establishing a causal link between the use of online platforms and the improvement of language skills, as it makes it possible to isolate the independent variable’s (teaching method) influence on the dependent variable (language proficiency results).

Participants

The study involved 180 students aged 18 to 25 who were studying for a degree in Philology (English Language). All participants were 2 nd and 3rd-year full-time students for whom studying English is a mandatory part of the curriculum. The inclusion sampling was purposeful and involved considering the following criteria:

29. 1. According to the Common European Framework of Reference for Languages, one should be able to speak English at the B 1–B 2 level. (CEFR). The level was confirmed using an entrance test adapted to the domestic assessment system and validated.
30. 2. The age category is from 18 to 25 years old, meaning undergraduate students. This helped ensure relative homogeneity within the sample.
31. 3. Voluntary written consent to participate in the study was obtained.

Distribution Procedure: After passing the entrance test, all participants were divided into two groups equal in number (90 people in each): An experimental group that used online platforms to study English. A control group that studied using traditional methods.

As a result, two representative segments of students were formed, which allowed for the generalization of the results within the target audience.

Procedure

The study lasted 12 weeks. Initially, a pre-test was conducted, which involved taking a standardized language test to determine the initial level. The test included reading, grammar, vocabulary, listening, and writing tasks, which provided comprehensive coverage of the key language skills necessary for a reliable diagnosis of the B 1–B 2 level.

To increase the validity of the test, content and design principles were followed. Specifically, thetesttasks were created based on descriptive CEFR scales that cover specific language actions characteristic of levels B 1–B 2. The test was compared with the results of international exams, including the TOEFL ITP and Cambridge Preliminary/First (PET/FCE), based on previous studies that used similar assessment scales. The authors used Cronbach's alpha coefficient to check how reliable the test was. It was 0.87, which means that the test tasks were very consistent with each other. Testing was conducted under standardized conditions, the same for all participants, which minimized the influence of external factors on the results. Based on the pilot results, tasks with a low discrimination index were eliminated, and instructions were adapted to improve clarity. Thus, the entrance test used can be considered a reliable instrument.

During the intervention phase, the experimental group (EG) used online platforms for 2-3 hours per week and actively completed various exercises in vocabulary, grammar, reading, listening, and interactive dialogs. The main online platforms became Duolingo, Babbel, and Moodle (the university's LMS). These platforms were chosen for their interactivity, gamification, wide range of language exercises (listening, reading, vocabulary, and dialogs), easy accessibility, and the ability to track learning progress. The control group (CG) attended traditional in-person classes with the same weekly workload. Students in the control group used textbooks (English File B 1/B 2, Grammar in Use), printed materials, lectures, and in-class sessions with the instructor. The next step was post-testing. After 12 weeks, both groups took the same language test again. The main data were collected based on the results of pre- and post-intervention tests, as well as through activity log files on online platforms (for the experimental group).

Data analysis

Statistical methods were used for data analysis. The authors used a paired t-test to look at the outcomes of the tests before and after for each group. An independent t-test was used to look at the average results between the experimental and control groups. The analysis was performed using SPSS software (version XX) with a statistical level of $p<0.05$. The study also used the comparison method to correlate the obtained data with the results of other scientists.

Ethical Considerations

In this study, all participants were informed about the purpose of the study and gave their voluntary written consent to participate. Besides, the study adhered to the principles of anonymity and confidentiality of personal data. The study was approved by the university's ethics committee in accordance with current Ukrainian legislation.

Results and Discussion

The first stage of the study aimed to define the level of English proficiency among the participants before and after using different teaching methods: online platforms in the experimental group (EG) and traditional methods in the control group (CG). The maximum score for the test was 100. Before the experiment began, the normality of the data allocation was tested using the Shapiro-Wilk test. The results showed that all data were normally distributed ($p > 0.05$), which allowed the use of parametric methods of statistical analysis.

In both groups (90 people each), the initial average results were statistically similar. This further indicates the homogeneity of the sample and provides grounds for a subsequent correct comparison of the results. After 12 weeks of training, noteworthy improvement was observed in all participants, but the experimental group using online platforms (Duolingo, Babbel, Moodle) showed a higher growth rate. Specifically, the average score of the EG before testing was 62.4, and after – 77.1. Moreover, in the CG, it was 61.9 (before testing) and 69.8 (after testing).

Table 1.

Dynamics of average scores in the EG and CG before and after intervention

Group Test M (medium) SD Min Max

Experimental Before experiment 62,4 6,7 48 76

After 77,1 6,2 65 89

Control Before experiment 61,9 7,1 46 75

After 69,8 6,5 58 82

Thus, the overall gain was+14.7 pointsinthe EGand+7.9 pointsinthe CG. To assess the significance of changes within each group, a paired t-test was applied. All changes were found to be statistically significant ($p < 0.001$). However, the Cohen's d values showed that the intervention effect was much more pronounced in the experimental group:

Table 2.

Paired t-test results to assess changes within each group

Group t (df=89) p-value Cohen’s d (effect)

Experimental 17,41 < 0.001 1,83

Control 10,52 < 0.001 1,11

To calculate the difference between the two groups after the intervention, the independent samples t-test was used, the results of which confirmed a statistically Meaningful advantage of the EG: $t(178) = 7.48$, $p < 0.001$, Cohen's $d=1.11$. This means that using online platforms is highly effective compared to traditional methods. A detailed analysis of individual language competencies showed that the EG considerably improved their listening (+3.9) and reading skills (+3.8). At the same time, in the control group, the increase in these indicators was +2.3 and +1.9, respectively (See Table 3).

Table 3.

Changes in indicators of language competencies in the EG and CG

Skill Group Pre (M±SD) Post (M±SD) Increase t p

Reading Experimental 15,3±2,1 19,1±1,8 +3,8 12,7 < 0.001

Control 15,2±2,2 17,1±2,0 +1,9 7,1 < 0.001

Listening Experimental 14,6±2,3 18,5±1,9 +3,9 13,9 < 0.001

Control 14,4±2,4 16,7±2,1 +2,3 8,3 < 0.001

Writing Experimental 16,0±2,4 18,2±2,2 +2,2 9,4 < 0.001

Control 15,8±2,6 17,1±2,3 +1,3 5,5 < 0.001

Speaking Experimental 16,5±2,5 18,6±2,1 +2,1 8,9 < 0.001

Control 16,3±2,4 17,3±2,3 +1,0 4,2 < 0.001

Thus, the experimental group showed higher results, especially in receptive activities (reading and listening), which could be attributed to the gamified format of presenting the material, access to authentic resources, and the frequency of repetition at home.

To assess the efficiency of individual online resources in the process of language skills development, the experimental group (n = 90) was divided into 3 subgroups of 30 people each, with each subgroup working with a different platform: Subgroup A–Duolingo; Subgroup B–Babbel; Subgroup C–Moodle. All students studied for 12 weeks and spent 2–3 hours per week working with the platform.

The initial level of reading skills in all three subgroups is about 15 points. Moodle showed the greatest increase: +4.4 points, Cohen's d effect 1.10. Babbel had an average increase(+3.6 points), and Duolingo had the smallest(+3.1 points). Thus, Moodle is the most effective for developing reading skills. All three platforms showed a good increase in listening; however, Duolingo leads with +4.2 points and d = 1.08.

For developing writing, Babbel was the most useful platform(+2.9 points, d=0.93). Mood le also showed a result(+2.7), while Duolingo only showed +2.0 points (d=0.67 —average effect). Babbel contains structured exercises on sentence construction and grammar usage, which are especially effective for writing. Babbel is also important for developing speaking skills (+2.5 points, d = 0.88). For vocabulary development, the best app is Duolingo (+4.5 points, d = 1.25). This is the highest score in the table overall.

Table 4.

Developing language skills with the help of online platforms (Pre/Post/ΔM/d).

Skill Platform Pre Post Increase(Δ M) Cohen’s d

Reading Duolingo 15,0 18,1 3,1 0,82

Babbel 14,8 18,4 3,6 0,91

Moodle 15,2 19,6 4,4 1,10

Listening Duolingo 14,4 18,3 3,9 1,00

Babbel 14,5 18,2 3,7 0,94

Moodle 14,6 18,8 4,2 1,08

Writing Duolingo 16,1 18,1 2,0 0,67

Babbel 15,8 18,7 2,9 0,93

Moodle 16,0 18,7 2,7 0,86

Speaking Duolingo 16,4 18,1 1,7 0,61

Babbel 16,3 18,8 2,5 0,88

Moodle 16,5 18,6 2,1 0,75

Vocabulary Duolingo 14,8 19,3 4,5 1,25

Babbel 14,9 18,3 3,4 0,87

Moodle 15,1 19,0 3,9 1,00

Grammar Duolingo 15,5 18,7 3,2 0,90

Babbel 15,2 19,3 4,1 1,18

Moodle 15,4 19,3 3,9 1,09

Average score Duolingo 91,0(all) 104,2 +13,2 1,64

Babbel 91,3 106,0 +14,7 1,76

Moodle 91,8 108,0 +16,2 1,89

Thus, Moodle showed a high overall gain:+16.2 points, effectsized=1.89. At the same time, Babbel also scores high(+14.7, d = 1.76). Ultimately, Duolingo is effective for developing vocabulary skills. The overall platform growth is +13.2, d = 1.64. Table 3 shows the summary scores for all skills.

Table 5.

Online platform effectiveness by language skills with Cohen's d

Language Skills Duolingo

Δ M±SD

Cohen’s d Babbel

Δ M±SD

Cohen’s d Moodle

Δ M±SD

Cohen’s d. The most effective platform

Reading 3,1±1,2

0,82 3,6±1,3

0,91 4,4±1,1

1,10 Moodle

Listening 4,2±1,2

1,08 3,7±1,5

0,94 3,9±1,3

1,00 Moodle

Writing 2,0±1,1

0,67 2,9±1,2

0,93 2,7±1,4

0,86 Babbel

Speaking 1,7±1,2

0,61 2,5±1,3

0,88 2,1±1,4

0,75 Babbel

Vocabulary 4,5±1,0

1,25 3,4±1,2

0,87 3,9±1,1

1,00 Duolingo

Grammar 3,2±1,1

0,90 4,1±1,0

1,18 3,9±1,1

1,09 Babbel

Average gain 13.2±5.8

1,64 14,7±6,0

1,76 16,2±5,5

1,89 Moodle

Note: Interpretation of Cohen's d: < 0.5 - weak effect; 0.5–0.8 - medium; > 0.8 - strong effect; > 1.0 - very strong effect (practically significant).

Thus, in the modern educational environment, the use of online platforms for learning foreign languages has become not only a widespread phenomenon but also a necessity. This transformation was largely driven by technological progress.

The central problem of the research was to determine the influence of modern platforms on the development of different components of language competence. The results obtained clearly showed the advantage of using online platforms in the language learning process. All three tested platforms – Duolingo, Babbel, and Moodle – contributed to a significant improvement in students' language proficiency over 12 weeks of learning. The total increase in results across all skills was: Duolingo +13.2; Babbel +14.7; Moodle +16.2. The highest progress was observed in vocabulary, reading, and listening skills, which confirms the potential of digital tools in working with receptive language skills. The high effect sizes (Cohen's d) are particularly indicative, ranging from 0.82 to 1.25 for individual skills, which suggests a practically significant impact of the platforms on learning outcomes. The results obtained correlate with a number of recent studies that also highlight the effectiveness of digital learning (Báez et al., 2019; Ramírez-Castañeda, 2020). Specifically, modern authors who have researched the effectiveness of Duolingo have found that daily practice on the platform corresponds to a semester of a university course, particularly in terms of vocabulary and listening comprehension (Hassan et al., 2022; Loewen et al., 2019; Piller & Bodis, 2022). Similar to our study, Duolingo was found to be extremely effective in developing passive vocabulary and grammatical structures. Other scholars have pointed out that platforms using gamification increase motivation but often don't cover productive skills like writing and speaking in sufficient depth (Hackett et al., 2023; Bezanilla et al., 2019). This is completely consistent with our results: Duolingo showed the lowest gains in these two categories (Peláez-Sánchez & Velásquez-Durán, 2023). Instead, other studies have highlighted the importance of using the LMS Moodle in philological training (Gamage et al., 2022; Roy et al., 2018). Specifically, the authors demonstrated the effectiveness of this resource for developing academic writing and reading, which is confirmed in this work (Remache Carrillo et al.,2022; Maican&Cocoradă,2021). Moodle allows for the integration of authentic texts, writing assignments, and the instructor’s feedback (Criollo-Cetal.,2022; De Prada et al., 2022). This is important for understanding a foreign language. Regarding the Babbel platform, several studies have highlighted its advantages in developing structured speaking, thanks to its conversational exercises and systematic presentation of grammar (Dorner & Cervantes-Soon, 2020; Seitenova et al., 2023). In this study, Babbel demonstrated the best results in writing, speaking, and grammar formation, which confirms the findings of other authors.

Overall, the analysis of the results allowed the authors to conclude that the effectiveness of online platforms depends not only on the duration of use but also on the content methodology, task structure, and level of interactivity. Therefore, the study’s findings supported the first hypothesis. In both the overall results and the distribution across individual language skills, students in the EG showed statistically significantly higher gains than participants in the control group who were learning from classical textbooks. Additionally, the effect sizes within the range of 0.86–1.25 confirm the practical significance of the changes. Thus, it can be stated that the systematic use of online resources truly enhances the effectiveness of language learning. However, the second hypothesis is partially confirmed. It was expected that Duolingo would be important for developing listening skills, but this platform has become important for vocabulary development. On the other hand, Moodle confirmed its advantage in reading ($\Delta M = 4.4$; $d = 1.10$); That is, although the overall trend is confirmed, different platforms have different effects on individual language skills (Esnaola-Arribillaga& Bezanilla, 2020). Thus, the actual distribution of efficiency

differs somewhat from the predicted one. It is particularly important that Babbel proved to be significant in developing productive skills (speaking, writing), while Moodle was important for receptive skills (reading, listening).

Therefore, the obtained results have significant practical implications for English language teachers, methodologists, and educational program leaders. They allow the rational selection of digital platforms depending on the didactic goals. Additionally, the results highlight the feasibility of using a combined approach to platforms.

Despite the compelling results obtained, the interpretation of the study's results should consider certain limitations. Specifically, the limited intervention period (12 weeks) did not allow the assessment of the long-term impact of using online platforms. Perhaps some skills, particularly productive ones (speaking, writing), take longer to show significant changes. Additionally, motivational factors were not controlled in the study. These limitations do not diminish the value of the data obtained, but they do indicate the need for further research with a longer training period.

The study has practical implications for teachers. Specifically, the results show that online platforms can be integrated into curricula not as an addition, but as a full-fledged part of the learning process. Additionally, it's worth using a combined approach, for example, Duolingo for vocabulary practice between classes, Moodle for written homework assignments, and Babbel for individual preparation for oral presentations. Additionally, tasks from platforms should be adapted to the modern curriculum of higher education institutions. Instructors should facilitate students'work with the platforms and provide feedback. Besides, in the future, software developers should improve various components of productive skills training, specifically by implementing speaking modules with automatic voice recognition and feedback, and expanding the possibilities for open-ended writing that can be checked manually or with AI.

Conclusions

Therefore, the study confirmed the importance of using online platforms (Duolingo, Babbel, Moodle) in developing the language skills of students in Ukrainian universities. The experimental results showed that online platforms contribute to the improvement of all types of language activity, especially listening, reading, and vocabulary. Moodle platform showed the highest results, although Duolingo proved to be the most effective in vocabulary development, and Babbel in forming productive skills (writing and speaking). The hypothesis about the overall effectiveness of online learning (H1) was fully confirmed, while the hypothesis about differences between platforms (H2) was partially confirmed. This research is of significant value for both Ukrainian higher education and the international system of foreign language teaching, as it provides empirical evidence supporting the implementation of online platforms in the educational process in Ukrainian HEIs and identifies the specific effects of individual platforms on different language skills, allowing better adaptation of digital tools to learning objectives. Based on the results obtained, it is advisable to propose specific directions for practical implementation. Specifically, universities should integrate online platforms into foreign language courses, not as supplementary resources, but as key components of the learning process. Additionally, platforms with advanced audio-visual and interactive features, such as Moodle and Babbel, are worth using for practicing

academic reading, writing, and listening. Duolingo should be used for individual vocabulary review and automating grammatical structures, especially at the beginner and intermediate levels. Further research aims to expand the sample by including students from different majors and levels of training. It's also necessary to implement longer intervention periods (more than one semester). This will allow an assessment of the stability and long-term impact of the platforms.

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APPENDICES

TIC and E-Learning Course Support

Purpose of the appendices. This section gathers complementary pedagogical resources that support the lectures of the course. It includes assessment activities, suggested readings, and an additional scientific appendix presenting a summary of included studies related to artificial intelligence, online platforms, and language learning. The appendices are designed to help students review, practice, and deepen their understanding of the course content.

Appendix 1. Assessment Activities

The following activities may be used for continuous assessment, classroom practice, homework, or Moodle-based activities. They are aligned with the main lectures of the course and aim to evaluate both theoretical understanding and practical digital skills.

Activity	Related lecture	Task description	Expected output
Activity 1: Computer Networks and Internet Concepts	Lectures: Networking and Internet	Students identify the type of network used in a university environment and explain the difference between LAN, WAN, client/server architecture, and peer-to-peer architecture.	Written answer of 1 to 2 pages with a simple diagram of the network.
Activity 2: Web Browser Exploration	Lecture: Internet	Students open a web browser and identify the address bar, tab bar, navigation buttons, menu button, history, favorites, and extensions.	Annotated screenshot or written description of the browser interface.
Activity 3: E-mail Writing Practice	Lecture: E-mailing	Students write a professional e-mail to a teacher asking for clarification about an assignment deadline. The e-mail must include a clear subject, greeting, body, closing phrase, and signature.	Professional e-mail draft in Word or sent through the institutional e-mail platform.
Activity 4: Internet Safety Checklist	Lecture: Tips for Surfing the Internet Safely	Students prepare a checklist for protecting a personal computer, securing passwords, avoiding suspicious attachments, and using public Wi-Fi safely.	Checklist of at least 10 safety rules.
Activity 5: Microsoft Word Formatting Task	Lectures: Editing Software and Microsoft Word	Students create a two-page document using headings, page numbers, spacing, margins, tables, and references.	Formatted Word document following the teacher's instructions.
Activity 6: Social	Lectures: Social Networks	Students analyze how user	Short analytical paragraph

Activity	Related lecture	Task description	Expected output
Networks and Digital Identity	and Social Media	profiles, privacy settings, online communities, and platform features shape digital identity.	of 300 to 400 words.
Activity 7: MOOCs and Moodle	Lectures: MOOCs and LMS/Moodle	Students compare a MOOC platform and a university Moodle platform in terms of access, content organization, assessment, and learner autonomy.	Comparative table followed by a short conclusion.
Activity 8: Artificial Intelligence in E-Learning	Lecture: Artificial Intelligence in E-Learning	Students identify three AI tools that can support academic learning and discuss one ethical concern related to each tool.	Table with tool, function, benefit, and ethical concern.

Assessment Rubric

Criterion	Description	Mark
Understanding of concepts	The student demonstrates correct understanding of the key concepts studied in the lecture.	4 points
Application of digital skills	The student applies the required digital task correctly and follows the instructions.	4 points
Organization and clarity	The answer or submitted file is clear, structured, readable, and complete.	4 points
Technical accuracy	The student uses appropriate terminology, correct steps, and accurate examples.	4 points
Academic and ethical behavior	The student respects privacy, copyright, citation rules, and professional communication standards.	4 points

Appendix 2. Suggested Readings

The following suggested readings and resources are proposed to help students deepen their knowledge of ICT, e-learning, digital communication, cybersecurity, social media, MOOCs, Moodle, and artificial intelligence in education. The list may be adapted according to the course objectives and the level of the students.

Theme	Suggested reading/resource	Why it is useful
ICT and digital literacy	International Telecommunication Union. Digital Skills Toolkit.	Useful for understanding basic digital competencies and ICT literacy.
Computer networks	Kurose, J. F., & Ross, K. W. Computer Networking: A Top-Down Approach.	Recommended for students who want to understand networks more deeply.
Internet safety	National Institute of Standards and Technology resources on passwords and cybersecurity awareness.	Useful for basic safety rules, passwords, and secure digital behavior.
E-mailing	RFC 5321 and RFC 5322 documents on Internet mail systems.	Useful for understanding the technical standards behind e-mail communication.
Microsoft Word	Microsoft Support documentation for Word and Microsoft 365.	Useful for practical tutorials on formatting, templates, comments, and collaboration.
Social networks	boyd, d. m., & Ellison, N. B. Social network sites: Definition, history, and scholarship.	Important academic reading for defining social networking sites.
Social media	Kaplan, A. M., & Haenlein, M. Users of the world, unite! The challenges and opportunities of social media.	Useful for understanding social media platforms and participation.
MOOCs	Yuan, L., & Powell, S. MOOCs and Open Education: Implications for Higher Education.	Useful introduction to open online learning and MOOC models.
Moodle and LMS	Moodle official documentation.	Useful for learning course access, resources, assignments, forums, and quizzes.
Artificial intelligence in education	UNESCO guidance on AI and education.	Useful for ethical, pedagogical, and policy-related issues.

How Students Should Use the Readings

• Read the suggested materials progressively, according to the order of the lectures.

• Use the readings to clarify concepts that were introduced briefly in class.

• Take notes using short definitions, examples, and diagrams.

• When using online resources, verify the credibility of the source before citing it.

• Use institutional or official documentation when learning practical digital tools such as Moodle, Word, or Microsoft 365.

Appendix 3. Additional Scientific Article

Appendix A. Summary of Included Studies

This appendix presents an organized version of the summary table of included studies. It highlights the author(s), participants, AI tool or digital tool, skills examined, benefits, and challenges reported in the studies. The table is intended to support the scientific article attached to the course support.

Author	Participants	AI tool	Skills	Benefits	Challenges
Cong-Lem et al. (2024)	31 EFL teachers from Vietnam	Not specified	Critical thinking; creativity; independence	Enhances language teaching, promotes critical thinking and genuine learning motivation, and supports personalized learning.	AI-driven plagiarism, over-reliance on AI may hinder critical thinking and language proficiency, and concerns about AI-generated work.
Fathi et al. (2024)	65 EFL learners	Not specified	Speaking; fluency; lexicon; accuracy; pronunciation	Enhances speaking skills, provides personalized feedback, and improves confidence, vocabulary, grammar, and pronunciation.	Small sample size, short study timeframe, and exposure to different instructional methods.
Fleckenstein et al. (2024)	89 pre-service teachers from a German university and 200 teachers from the UK	Not specified	Assessment	Improves teachers' assessment, encourages focus on skills that AI cannot replicate, and promotes ethical AI integration.	Difficulty identifying AI-generated texts and overconfidence among teachers.
Foung et al. (2024)	74 engineering, computing, and biochemistry students	Not specified	Tool selection; evaluation	Considers levels of language proficiency and field, and promotes balanced tool usage.	Generalizability issues and possible impact of the interviewer and coder.
Gao et al. (2024)	95 Chinese EFL university teachers	ChatGPT	Self-evaluation; writing	Enhances academic achievement and promotes subjective learning.	Neglect of traditional resources and concerns about reliability and privacy.
Ghafouri (2024)	30 Iranian EFL learners	ChatGPT; AIKAKU	Building rapport	Enhances teacher-student rapport and L2 grit, promotes emotional support and engagement.	Lack of experimental trials and over-reliance on correlational analyses.
Ghaithi et al. (2024)	150 Omani EFL learners	AI-based chatbots	Vocabulary; interaction	Improves confidence, motivation, and self-efficacy.	Slow development and limited use in language learning.
Gozali et al. (2024)	18 undergraduate students in Indonesia	Not specified	Feedback processing; grammar	Enhances grammar, style, and idea generation.	Incomplete knowledge and over-reliance on technology.
Guo & Li (2024)	69 Chinese undergraduate students	Not specified	Writing; motivation	Enhances writing motivation and confidence through tailored support.	Lack of contextual information and outdated knowledge.
Hong et al. (2024)	30 college students	ChatGPT	Analysis; reasoning; critical thinking	Enhances critical thinking skills, encourages active research, and facilitates peer review sessions.	Difficulty analyzing diverse viewpoints and generating counterarguments effectively.
Huang & Zou (2024)	203 EFL learners from four Chinese universities	EAPTalk	Speaking	Enhances speaking fluency, pronunciation, and accuracy.	Limited sample size and cultural influences not considered.
Jamshed et al. (2024)	258 Saudi EFL students	Not specified	Autonomous learning	Enhances personalized and self-learning, and increases self-confidence.	Privacy concerns and high costs.
Ji & Han (2024)	One male and four female learners in their twenties	Various tools	Vocabulary; pronunciation; comprehension	Enhances teaching practices through individualized feedback, relieves language anxiety, and improves conversational skills.	Need for classroom interaction for diverse learner inclusion and limited study scope.
Liu & Ma (2024)	405 ChatGPT users from Chinese EFL backgrounds	ChatGPT	AI acceptance	Benefits of informal digital English learning include ease of use and usefulness.	Gender ratio imbalance and issues of reliability and construct validity.
Liu et al. (2024)	8 Chinese international undergraduate students	ChatGPT; Bing AI; QuillBot; GPT-4; DALL-E 2	Writing; multimodal composing	Enhances text generation and facilitates multimodal composing.	Challenges with AI image reasonability, style preferences, and correlating information.
Mahapatra (2024)	First-year science and engineering students	Not specified	Writing; feedback	Offers tailored feedback and helps overcome language barriers.	Difficulty implementing formative feedback in large classrooms and addressing individual needs.

Author	Participants	AI tool	Skills	Benefits	Challenges
Molefi et al. (2024)	315 in-service teachers	Not specified	Technical proficiency; integration	Enhances professional development, shapes intentions to use AI, and advocates for supportive policies.	Digital connectivity disparities, ethical limitations, and privacy concerns.
Muslimin et al. (2024)	126 EFL students from an English education department in Indonesia	Not specified	Writing; creativity; critical thinking	Enhances learning engagement and personalized feedback.	Connectivity issues and limited features.
Rahimi & Sevilla-Pavón (2024)	124 Iranian in-service EFL teachers	Not specified	Adaptation	Enhances teaching innovation and accountability.	Negative preconceptions and limited usage.
Tseng & Lin (2024)	15 participants in a Taiwanese university	OpenAI GPT-3.5	Writing; organization	Provides immediate feedback and supports cohesive organization.	Writing organization issues and peer review limitations.
Wang & Xue (2024)	113 EFL students	Not specified	Engagement	Enhances academic engagement, including cognitive, behavioral, and emotional engagement.	Limited participant number and reliance on self-report questionnaires.
Xiaolei & Teng (2024)	204 sophomore EFL learners	ChatGPT; Grammarly; QuillBot	Critical thinking; autonomous learning; writing	Enhances language proficiency, provides immediate feedback, and helps mitigate over-reliance on AI.	Limited metacognitive awareness and motivational challenges.

Appendix 4. Glossary of E-learning Terms

This appendix presents a glossary of key concepts and technical terms used in e-learning. It supports students in understanding the vocabulary related to MOOCs, LMS platforms, Moodle, online learning, instructional design, digital learning standards, artificial intelligence, and virtual learning environments.

Source: Adapted from “Le glossaire du e-learning”, Opigno, 13 December 2022.

Au cours de ses décennies d'existence, l'industrie de l'apprentissage en ligne a développé un vocabulaire à part entière qui tourne autour de domaines aussi divers que la psychologie, la pédagogie, la gestion d'entreprise, les ressources humaines et le développement de logiciels. Prenez n'importe quel aspect du processus d'apprentissage, et une douzaine de termes le dévoileront d'un point de vue technique, commercial, juridique et éducatif. Il n'est donc pas étonnant que tout cela puisse parfois prêter à confusion.

Pour vous aider à vous y retrouver dans cette pléthore de termes à consonance similaire et de ces innombrables acronymes, nous avons compilé un dictionnaire de l'apprentissage en ligne. Vous y trouverez le jargon utilisé par les créateurs et les utilisateurs de solutions e-learning, les formateurs et les stagiaires.

#

70:20:10 LEARNING

Le modèle d'apprentissage de Michael Lombardo et Robert Eichinger suggère que l'apprentissage optimal se compose à 70% d'expériences et de formation sur le tas, à 20% de retours d'information de la part des pairs ou d'apprentissage social, et à 10% de cours et de formations formels.

A

ACCESSIBILITÉ

Une caractéristique de la technologie qui aide les personnes ayant des difficultés sensorielles, intellectuelles ou technologiques. Par exemple, l'apprentissage en ligne permet aux personnes souffrant d'un handicap moteur d'étudier à distance, les lecteurs d'écran aident les personnes malvoyantes et les

sous-titres rendent le contenu vidéo accessible aux personnes malentendantes. Le W3C fournit des directives sur l'accessibilité des contenus web.

ACTIVE LEARNING

Apprentissage actif

Une méthode d'apprentissage dans laquelle les étudiants ne se contentent pas d'écouter passivement les cours, mais découvrent eux-mêmes les connaissances par le biais de discussions, de travaux pratiques, d'exercices de groupe, de réflexions, etc. Cette approche aide les apprenants à retenir les connaissances et à améliorer leurs capacités de réflexion supérieures.

ADAPTIVE LEARNING

Apprentissage adaptatif

Une méthode d'apprentissage dans laquelle des algorithmes informatiques analysent les besoins et les progrès de l'apprenant et construisent des cours de formation personnalisés.

ADDIE

Acronyme de "Analysis, Design, Development, Implementation & Evaluation" (Analyse, conception, développement, mise en œuvre & évaluation). Il s'agit d'un cadre destiné aux concepteurs pédagogiques et aux développeurs de formation qui décrit les étapes de la création d'outils de formation.

ADVANCED DISTRIBUTED LEARNING INITIATIVE (ADL)

Initiative ADL

Ou initiative d'apprentissage distribué avancé. Le programme du ministère américain de la défense qui crée et met en œuvre des spécifications d'interopérabilité technologique pour l'apprentissage distribué. En 2001, ils ont lancé SCORM.

AICC STANDARD

Standard AICC

La première norme de contenu d'apprentissage en ligne élaborée par l'Aviation Industry CBT Committee (AICC) en 1993 pour la formation aéronautique assistée par ordinateur. Elle a rationalisé les formats et les cadres de contenu utilisés dans les LMS et a été adoptée en dehors du secteur de l'aviation.

API

Signifie "Application Programming Interface" (interface de programmation d'applications). L'API permet à différents programmes informatiques de communiquer entre eux. Grâce à l'API, les développeurs peuvent interagir avec les données d'un système tiers sans y entrer, par exemple pour mettre à jour les listes d'utilisateurs.

APPLICATION / APP

Un logiciel qui fonctionne sur un ordinateur. Le terme "app" est principalement utilisé pour les programmes conçus pour les téléphones mobiles.

ARCS

Un acronyme pour Attention, Relevance, Confidence & Satisfaction (Attention, Pertinence, Confiance et Satisfaction) ; un modèle de conception pédagogique développé par John Keller affirme que ces quatre composantes assurent la continuité de la motivation de l'apprenant pendant la formation.

ARTIFICIAL INTELLIGENCE

Intelligence artificielle

Selon l'Oxford English Dictionary, l'IA est "la théorie et le développement de systèmes informatiques capables d'effectuer des tâches qui requièrent normalement l'intelligence humaine." Une véritable IA universelle devrait être capable de se substituer entièrement à l'intelligence humaine.

Bien qu'ils n'existent pas encore, les sous-domaines de l'IA (vision par ordinateur, reconnaissance vocale, traitement du langage naturel, etc.) sont excellents pour les tâches ayant des objectifs précis, par exemple l'analyse de l'activité des utilisateurs pour personnaliser leur cours ou la génération de sous-titres vidéo.

ASSESSMENT SOFTWARE

Logiciel d'évaluation

Logiciel permettant d'évaluer le niveau de compétence ou de connaissance de l'apprenant. On parle également de surveillance à distance - technologies utilisées pour l'examen des étudiants à distance.

ASYNCHRONOUS LEARNING

Apprentissage asynchrone.

Type d'apprentissage en ligne qui permet aux apprenants de suivre un cours individuellement, à leur propre rythme, également appelé apprentissage à son propre rythme. Il s'agit généralement d'un apprentissage autodirigé, sans instructeur ni camarades de classe.

AUGMENTED REALITY

Réalité augmentée

Une superposition d'informations numériques sur l'environnement de l'utilisateur en temps réel grâce à des lunettes spéciales ou des images de caméra.

AUTHENTIC LEARNING

Apprentissage authentique.

Une approche de l'apprentissage basée sur l'établissement de liens entre le matériel et les tâches d'apprentissage et les questions, problèmes et applications du monde réel.

AUTHORING TOOL

Un logiciel pour la création de contenu d'apprentissage en ligne et de programmes de formation, par exemple Adobe Captivate, Articulate Storyline, Elucidat, Trivantis Lectora et iSpring Pro.

B

BESPOKE COURSE

Cours sur-mesure

Ou un cours personnalisé, est un cours e-learning spécifiquement conçu ou fait sur mesure pour le client. La personnalisation implique l'image de marque, les objectifs et les pratiques du client, les caractéristiques de l'apprenant, etc.

BITE-SIZED LEARNING

Apprentissage par petites touches

Une méthode d'apprentissage qui se concentre sur la réalisation d'un seul objectif d'apprentissage réduit.

BLENDED LEARNING

Apprentissage mixte

Une méthode d'apprentissage qui combine une formation en ligne et une formation en personne hors ligne, dans laquelle le matériel d'apprentissage numérique soutient l'enseignement en face à face et vice versa, ou un mélange de formation en direct et à son propre rythme.

BRANCHING SCENARIOS

Scénario à choix multiple.

Une technique d'apprentissage utilisée dans la gamification et l'apprentissage interactif où les utilisateurs choisissent parmi plusieurs solutions à des scénarios donnés, et leurs choix affectent les parcours d'apprentissage.

C

CDN

"Content Delivery Network" (réseau de diffusion de contenu), un groupe de serveurs géographiquement distribués et leurs centres de données. Avec le CDN, les utilisateurs reçoivent le contenu de serveurs situés à proximité, ce qui optimise et accélère la diffusion du contenu.

CEU

Continual Education Unit - Unité d'éducation permanente

Une mesure utilisée dans les programmes d'éducation permanente. Habituellement, le fait de compléter un certain nombre d'unités permet aux individus de maintenir leurs licences professionnelles.

CHIEF LEARNING OFFICER (CLO)

Responsable de l'apprentissage

Un employé de niveau exécutif qui définit et dirige la stratégie d'apprentissage et de développement de l'entreprise en fonction des buts et objectifs de l'organisation.

CLASSROOM-BASED TRAINING

Formation en classe

Formation en face à face avec un instructeur dans une salle de classe

CLOUD LMS

Un LMS basé sur le web qui stocke son contenu d'apprentissage et ses données de suivi et de rapport dans le cloud.

CMI-5

Signifie "Computer Managed Instruction 5" (Instruction géré par ordinateur). Il s'agit d'une xAPI modifiée, un projet conjoint de l'ADL et de l'AICC, une norme d'apprentissage en ligne qui permet à la xAPI de saisir des données de type SCORM, offrant essentiellement toutes les capacités de SCORM et de xAPI.

COGNITIVE LOAD

Charge cognitive

Terme proposé par John Sweller qui implique la "bande passante" limitée du cerveau. Lorsqu'un apprenant doit traiter trop d'informations, par exemple en essayant de lire un texte et d'écouter un fichier audio simultanément, la surcharge cognitive sollicite la mémoire de travail et entrave les performances de l'apprenant.

COLLABORATIVE LEARNING

Apprentissage collaboratif

Apprendre en réalisant une tâche commune au sein d'un groupe.

COMPLIANCE TRAINING

Formation sur la conformité

Formation sur la législation ou les réglementations industrielles, la santé et la sécurité des données, et la prévention des incidents. Ces initiatives de formation sont généralement imposées par la législation, la réglementation ou la politique, et des formations régulières sont nécessaires pour atteindre et maintenir la conformité.

COMPUTER-BASED TRAINING (CBT)

Formation assistée par ordinateur

Ancien nom de ce que l'on appelle aujourd'hui l'apprentissage en ligne, un cours auquel on accède via un ordinateur.

CONTENT LIBRARY

Bibliothèque de contenus

Une banque de contenu ou un site de stockage pour différents fichiers médias SCORM et xAPI (Tin Can) pour la création de cours.

CONTENT MANAGEMENT SYSTEM (CMS)

Système de gestion de contenu

Une plateforme utilisée pour créer, éditer, stocker et gérer du contenu numérique, généralement pour la publication.

CONTINUING PROFESSIONAL DEVELOPMENT (CPD)

Formation professionnelle continue

C'est une combinaison d'approches et de techniques d'apprentissage tout au long de la vie visant à permettre aux professionnels de rester au fait des évolutions dans leur domaine après une formation tertiaire ou postuniversitaire.

CORPORATE TRAINING

Formation d'entreprise

Organisation de la formation des employés de l'entreprise sur les compétences et connaissances professionnelles nécessaires.

COURSE BUILDER

Fonctionnalité du LMS utilisée pour télécharger et créer des cours.

COURSEWARE

Logiciels ou autres matériels conçus pour l'apprentissage en ligne.

CUSTOMER RELATIONSHIP MANAGEMENT (CRM)

Gestion de la relation client

Un système qui gère les profils des clients actuels et futurs de l'entreprise et l'historique des relations et des interactions avec eux.

CUSTOMER TRAINING

Formation clients

Une forme de soutien à la clientèle par la formation des clients et des partenaires sur la façon d'utiliser le produit ou le service d'une organisation.

D

DATA PROTECTION

Protection des données

Des pratiques de sécurité de l'information qui garantissent la sécurité des systèmes d'organisation et des données utilisateurs.

Outre les normes de sécurité sectorielles telles que l'ISO/CEI, il existe également toute une série de réglementations gouvernementales dont la conformité est obligatoire (GDPR, le règlement sur la vie privée en ligne (ePR), CPRA, etc.) contenant des dispositions et des exigences relatives au traitement des données personnelles.

DIFFERENTIATED LEARNING

Apprentissage différencié

Apprentissage modifié pour répondre aux besoins individuels par le contenu, le processus, le produit ou l'environnement d'apprentissage.

DIGITAL LEARNING OBJECT

Objet d'apprentissage numérique

Une ressource d'apprentissage multimédia réutilisable.

DIRECTED LEARNING

Apprentissage dirigé

Un modèle d'enseignement dans lequel l'enseignant décide des objectifs, du contenu de l'apprentissage et des activités à entreprendre par l'étudiant dans un environnement contrôlé et conformément à un programme prédéterminé ou syllabus.

DISTANCE LEARNING

Apprentissage à distance

Une forme d'apprentissage asynchrone lorsque les étudiants et les instructeurs se trouvent dans des endroits différents.

DRUPAL

Un logiciel de gestion de contenu modulaire, gratuit et open-source, qui peut être adapté et personnalisé pour des sites web simples ou des applications web complexes, par exemple un LMS.

E

E-LEARNING

Également appelé digital learning ou apprentissage numérique, apprentissage en ligne, formation en ligne (WBT) ou formation assistée par ordinateur (CBT), il s'agit de toute éducation ou formation à laquelle on accède par le biais d'appareils électroniques tels que des ordinateurs, des tablettes et des téléphones mobiles.

E-LEARNING STANDARDS

Normes d'apprentissage en ligne

Principes et spécifications techniques visant à assurer l'interopérabilité des LMS et des contenus d'apprentissage. L'industrie a adopté plusieurs normes : SCORM, multi-SCORM, Tin Can/xAPI et LRS, IMS Common Cartridge et Cmi5.

ELECTRONIC PERFORMANCE SUPPORT SYSTEM (EPSS)

Système électronique d'aide à la performance

Un logiciel destiné à améliorer l'expérience utilisateur des employés qui fournit un contenu d'auto-assistance juste à temps (conseils, instructions, bases de connaissances, fenêtres contextuelles intelligentes et assistance) pour permettre une performance maximale au travail avec une intervention minimale des autres.

EMPLOYEE TRAINING

Formation des employés

Activités de formation à l'intégration, aux compétences, à la conformité et aux produits fournies aux employés au sein de l'organisation.

EXPERIENCE APPLICATION PROGRAMMING INTERFACE (xAPI)

Expérience de l'interface de programmation d'applications

Une spécification d'apprentissage en ligne qui recueille des données sur les activités en ligne et hors ligne des utilisateurs dans un format cohérent lisible par presque tous les systèmes d'apprentissage en ligne, leur permettant ainsi de communiquer.

EXTENDED ENTERPRISE

Entreprise étendue

Concept selon lequel les organisations fonctionnent dans un réseau auto-organisé d'entreprises et de relations pour mettre un produit ou un service sur le marché. La formation en ligne de l'entreprise étendue implique la création de contenu de formation pour ce réseau : les fournisseurs, les distributeurs, les détaillants et les partenaires. La formation des clients peut être considérée comme une partie de l'entreprise étendue.

F

FACE-TO-FACE TRAINING (F2F)

Formation face-à-face

Une formation traditionnelle en personne où un étudiant et un enseignant sont physiquement présents et communiquent directement.

FLASH

Plateforme logicielle multimédia d'Adobe utilisée pour créer et diffuser du contenu et des applications web animés et interactifs. Trois formats e-Learning populaires reposent sur la technologie Flash : SCORM, xAPI (Tin Can) et vidéo. Le logiciel est obsolète depuis la fin de l'année 2020.

FLIPPED CLASSROOM

"Classe inversée" ou encore "l'apprentissage inversé", un type d'apprentissage mixte où les élèves sont initiés au contenu à la maison et le travaillent pendant les cours. De cette façon, le temps de classe est libéré pour des activités de réflexion plus poussées.

G

GAMES-BASED LEARNING

Apprentissage par le jeu

Une pratique d'intégration des jeux dans les contenus de formation.

GAMIFICATION

Intégrer la théorie et les mécanismes des jeux, tels que les défis, les points, les trophées et les classements, dans un processus d'apprentissage non ludique.

H

HTML5

Version 5 du langage de balisage hypertexte (HyperText Markup Language) qui utilise des balises sémantiques pour décrire le contenu eLearning et permet de rendre le contenu vidéo et audio directement dans un navigateur.

H5P (HTML5 PACKAGE)

Un cadre de collaboration de contenu open-source basé sur Javascript pour créer et partager du contenu HTML5 interactif.

HUMAN RESOURCE INFORMATION SYSTEM (HRIS)

Système d'information sur les ressources humaines

Logiciel pour un référentiel centralisé des données de base des employés pour les besoins de la gestion des RH. Le SIRH et le LMS peuvent être intégrés pour faciliter la création et la maintenance des utilisateurs, ainsi que le stockage des dossiers des apprenants.

HYBRID LEARNING

Apprentissage hybride

Un type d'apprentissage mixte où les cours synchrones sont enseignés simultanément en personne et en ligne (certains étudiants assistent au cours en personne, tandis que d'autres le rejoignent virtuellement depuis leur domicile).

I

IDENTITY PROVIDER (IdP)

Fournisseur d'identité

Dans un environnement d'authentification unique, l'IdP est le service d'authentification qui détient le répertoire des informations d'identification des utilisateurs.

IMMERSIVE LEARNING

Apprentissage immersif

Méthode de formation utilisant des jeux de rôle ou des simulations de réalité augmentée pour former les employés dans un environnement d'apprentissage sûr et interactif qui reproduit des scénarios de la vie réelle ou enseigne des compétences ou des techniques particulières.

INFORMAL LEARNING

Apprentissage informel

L'apprentissage qui se fait en dehors d'un environnement pédagogique structuré, généralement par l'absorption naturelle de connaissances provenant de l'environnement.

INSTRUCTIONAL DESIGN

Conception pédagogique

Création de contenus d'apprentissage et de cours de formation basés sur la psychologie cognitive et la théorie de l'instruction. Les concepteurs pédagogiques utilisent généralement des outils de création pour le développement de cours.

INSTRUCTOR-LED TRAINING (ILT)

Formation dispensée par un instructeur, en ligne ou hors ligne.

INTERACTIVE CONTENT

Contenu interactif

Contenu avec lequel les apprenants peuvent s'engager activement, par exemple en sélectionnant des options, en répondant à des questionnaires, etc.

INTERACTIVE LEARNING

Apprentissage interactif

Une approche d'apprentissage qui repose sur l'engagement volontaire de l'étudiant dans le processus d'apprentissage, souvent par le biais de la technologie.

INTEROPERABILITY

Interopérabilité

La capacité des composants logiciels ou matériels à fonctionner ensemble. Les normes d'apprentissage en ligne telles que SCORM, xAPI (Tin Can) et AICC garantissent l'interopérabilité du contenu et des technologies d'apprentissage en ligne.

J

JUST-IN-TIME LEARNING (JITL)

Apprentissage juste-à-temps

Une approche où l'apprentissage approprié est fourni aux apprenants au moment même où ils en ont besoin.

K

KIRKPATRICK MODEL

Le modèle le plus populaire d'évaluation de l'efficacité des méthodes de formation, développé par Donald Kirkpatrick dans les années 1950. Il les évalue en fonction de quatre niveaux de critères : le retour de l'étudiant sur la formation, les connaissances acquises, les changements de comportement et les résultats mesurés par rapport aux indicateurs clés de performance de l'entreprise.

KNOWLEDGE BASE

Base de connaissances

Un référentiel logiciel utilisé pour stocker des ressources de connaissances, une bibliothèque en ligne libre-service d'informations sur un produit, un service, un département ou un sujet.

KNOWLEDGE CONSTRUCTION

Constructeur de connaissances

Une partie de l'apprentissage actif, où l'apprentissage se fait en s'appuyant sur les connaissances et les expériences antérieures d'une personne.

L

LEARNER ANALYTICS

Analyse des apprenants

Collecte, analyse et communication de données d'apprentissage sur les utilisateurs afin de mieux comprendre leurs comportements, leurs compétences et leurs expériences, d'aider à identifier les lacunes en matière de compétences et d'adapter l'environnement d'apprentissage en conséquence.

LEARNING AND DEVELOPMENT (L&D)

Apprentissage et développement

Un sous-ensemble des ressources humaines (RH) qui vise à améliorer les compétences, les connaissances et les performances des individus et des équipes en facilitant une culture d'auto-amélioration et en développant des trajectoires d'apprentissage personnalisées pour les employés.

LEARNING CONTENT MANAGEMENT SYSTEM (LCMS)

Logiciel destiné aux créateurs de contenu d'apprentissage utilisé pour créer, gérer, héberger et suivre le contenu d'apprentissage numérique. Comme de nombreux LCMS peuvent également fournir du

contenu aux étudiants, ce terme est souvent utilisé de manière interchangeable avec celui de "système de gestion de l'apprentissage".

LEARNING DATA

Données d'apprentissage

Données produites sur un individu ou un groupe d'apprenants pendant la réalisation d'un cours d'apprentissage en ligne. SCORM, xAPI et d'autres normes, entre autres, régissent le format de ces données, afin qu'elles soient lisibles sur différentes plateformes.

LEARNING EXPERIENCE PLATFORM (LXP)

Plateforme d'expérience d'apprentissage

Ou Learning Engagement Platform (LEP), est une extension d'un LMS qui crée des expériences d'apprentissage personnalisées en regroupant les ressources d'apprentissage numériques internes, le contenu de tiers et les ressources générées par les utilisateurs et en les exploitant avec l'aide de l'IA. LXP fonctionne comme une plateforme de "Learning on Demand", avec des fonctionnalités de recherche accessibles et des recommandations de contenu basées sur les préférences et le comportement de l'utilisateur.

LEARNING MANAGEMENT SYSTEM (LMS)

Système de gestion d'apprentissage

Un logiciel pour l'administration centralisée, la documentation, le suivi, la production de rapports, l'automatisation et la diffusion de cours d'éducation et de formation.

LEARNING PATH

Parcours d'apprentissage

Un programme d'apprentissage structuré qui guide les apprenants à travers une série de cours. Grâce aux parcours d'apprentissage, les administrateurs contrôlent le calendrier et l'ordre d'achèvement des cours.

LEARNING PLATFORM

Plateforme d'apprentissage

Un terme générique pour les technologies utilisées pour créer et déployer l'apprentissage en ligne - logiciel auteur, LMS, etc.

LEARNING PORTAL

Portail d'apprentissage

Un hub ou un point d’accès avec du contenu et des ressources d’apprentissage numériques stockés de manière centralisée, où les utilisateurs accèdent au matériel d’apprentissage en ligne. Chaque portail d’apprentissage peut être personnalisé pour répondre aux besoins spécifiques des apprenants qui y accèdent.

LEARNING RECORD STORE (LRS)

Base de données d’apprentissage

Une base de données utilisée en conjonction avec xAPI pour collecter, stocker et récupérer des données sur les expériences d'apprentissage des utilisateurs à des fins d’analyse et d’interprétation.

LEARNING TOOLS INTEROPERABILITY (LTI)

Ou interopérabilité des outils d'apprentissage. Une norme d'opérabilité intersystème créée par l'IMS Global Learning Consortium. Elle existe pour normaliser la connexion des systèmes d'apprentissage, tels que le LMS, avec des outils externes, permettant une meilleure accessibilité du contenu d'apprentissage dans de nombreuses institutions.

LETSI

La fédération internationale pour l'interopérabilité des systèmes d'apprentissage, d'éducation et de formation, une fédération sans but lucratif qui facilite l'adoption de normes logicielles ouvertes dans les systèmes d'apprentissage.

LIVE VIRTUAL CLASSROOM

Classe virtuelle synchrone

Apprentissage en ligne où les enseignants et les étudiants peuvent présenter des supports de cours, s'engager et interagir avec d'autres membres de la classe virtuelle, et travailler en groupe ensemble. La principale caractéristique d'une classe virtuelle est qu'elle se déroule en direct, dans un cadre synchrone.

M

MACHINE LEARNING

Apprentissage machine

Un sous-domaine de l'IA dédié aux systèmes informatiques qui ne sont pas codés pour effectuer une tâche, mais apprennent à l'exécuter en trouvant des modèles dans un ensemble de données d'apprentissage. L'exemple le plus connu est la reconnaissance d'objets, c'est-à-dire la vision par ordinateur. Vous alimentez un algorithme avec un millier de photos de chats, il trouve des motifs dans les formes et les couleurs, puis il peut, espérons-le, différencier un chat d'une table à quatre pattes sur de toutes nouvelles images. En e-learning, les algorithmes ML sont par exemple utilisés pour recommander voire compiler des cours personnalisés en fonction de l'activité précédente de l'utilisateur.

MANIFEST FILE

Fichier manifeste

Le fichier de package SCORM décrivant la structure et le contenu du cours, une sorte d'instruction au LMS sur la façon de lire et de présenter le cours. Le package SCORM est un dossier .zip qui contient tout le contenu du cours. Le fichier manifeste (imsmanifest.xml) doit se trouver à la racine du package compressé ; sinon, vous ne pourrez pas importer correctement le cours dans votre LMS.

MASSIVE OPEN ONLINE COURSE (MOOC)

Un cours en ligne ouvert visant une participation illimitée.

MASTERY SCORE

Score de maîtrise

Un score qu'un apprenant doit atteindre pour réussir un module SCORM (lorsqu'un tel score est requis.)

MICROLEARNING

La livraison de contenu de formation en courtes rafales. Contrairement à l'apprentissage en petits morceaux, qui consiste davantage à restreindre les objectifs d'apprentissage, le micro-apprentissage concerne le mode de livraison (ce qui le rend idéal pour fournir des modules d'apprentissage en petits morceaux, juste à temps et l'apprentissage mobile).

MOBILE LEARNING (mLEARNING)

Apprentissage mobile

Tout apprentissage en ligne dispensé sur un appareil mobile (smartphone ou tablette).

MODULE

Un élément de base d'un cours. Un module peut contenir n'importe quel support de cours, tel qu'une vidéo, un fichier SCORM, un examen ou une enquête.

MULTI-TENANCY

Multi-location

Une architecture logicielle dans laquelle une seule instance logicielle dessert plusieurs locataires. Un locataire est un groupe d'utilisateurs ayant un accès commun au partage dédié de l'instance. Ce partage possède ses propres données, configuration, gestion des utilisateurs, fonctionnalités de locataire et propriétés non fonctionnelles, qui créent un environnement unique et personnalisé. Par exemple, un LMS peut avoir des ensembles personnalisés de contenu, de fonctionnalités et d'image de marque pour différents départements, emplacements et partenaires externes.

MULTIMEDIA LEARNING

Apprentissage multimédia

Un ensemble de principes de conception pédagogique développés par Richard E. Meyer, Roxana Moreno et John Sweller. Leur théorie stipule que présenter le même contenu verbalement et visuellement en même temps oblige un étudiant à le recouper mentalement dans la mémoire de travail, ce qui améliore l'apprentissage. Par conséquent, la configuration la plus optimale serait un contenu vidéo commenté. Cependant, ajouter quoi que ce soit par-dessus (musique de fond, texte écrit en plus de l'animation) peut entraîner une surcharge cognitive.

O

OFF-THE-SHELF CONTENT

Contenu standard

Contenu préfabriqué prêt pour une utilisation immédiate et vendu tel quel, sans personnalisation ni modification, par opposition au contenu sur mesure.; également appelé "contenu prêt à l'emploi".

ON-DEMAND LEARNING

Apprentissage à la demande

Le type d'apprentissage en ligne qui fournit aux apprenants le contenu de la formation en temps réel, à leur demande.

ON-THE-JOB TRAINING

Une forme d'intégration et d'acquisition de nouvelles compétences dans un environnement de travail simulé réel ou proche du réel.

ONBOARDING

Intégration

Intégrer un nouvel employé, partenaire ou client dans une organisation, le familiariser avec les produits et services de l'organisation et transférer les compétences et les connaissances nécessaires à son rôle.

ONLINE LEARNING

Apprentissage en ligne

Toute forme d'apprentissage effectuée via Internet.

OPEN BADGES

La norme de référence pour l'emballage et l'intégration d'informations sur les réalisations dans un fichier image portable agissant comme un badge numérique, développé par Mozilla.

OPEN-SOURCE SOFTWARE

Logiciel open-source

Un logiciel dont le code source est accessible au public pour le développement collaboratif, l'utilisation gratuite et la modification. Drupal est un exemple de logiciel open source utilisé pour la gestion de contenu. Et Opigno est un exemple de système de gestion de l'apprentissage open source basé sur Drupal.

P

PARTNER TRAINING

Formation des partenaires

Une partie de la formation en entreprise étendue pour les activités de l'organisation qui comprend une formation sur les produits, une formation à la vente, une formation d'assistance ou des conseils marketing pour les franchisés, les fournisseurs, les parties prenantes, etc.

PEDAGOGIE

L'étude, la méthodologie et la pratique de l'enseignement et de l'éducation. Dérivée du grec pour "conduire un enfant", la pédagogie est centrée sur le rôle de l'enseignant et la sélection des meilleures méthodes pour transmettre les connaissances et les compétences aux apprenants.

PERSONAL LEARNING ENVIRONMENT (PLE)

Environnement d'apprentissage personnel (PLE)

Un réseau d'outils, de communautés et de services que les apprenants sélectionnent, organisent et tirent des liens pour diriger leur propre apprentissage et poursuivre des objectifs éducatifs, par opposition au modèle dans lequel les étudiants consomment des informations via des canaux indépendants comme la bibliothèque, un manuel ou un LMS.

PERSONAS ou LEARNER PERSONAS

Ce sont des profils d'utilisateurs détaillés utilisés par les concepteurs pédagogiques pour comprendre les objectifs, les intérêts, la formation et les compétences de leurs apprenants et concevoir des cours pertinents.

PLATFORM AS A SERVICE (PaaS)

Plateforme en tant que service (PaaS)

Accès à la demande à une plateforme hébergée dans le cloud prête à l'emploi pour le développement, l'exécution, la maintenance et la gestion des applications.

PROBLEM-BASED LEARNING

Apprentissage fondé sur les problèmes

Une méthode d'enseignement centrée sur l'apprenant qui utilise des problèmes réels et ouverts comme matière de la classe. Au fur et à mesure que les élèves travaillent en petits groupes pour développer une solution, ils acquièrent non seulement des connaissances, mais également des compétences d'acquisition de connaissances et de résolution de problèmes, et apprennent à collaborer, à être proactifs et à utiliser la pensée critique.

PROPRIETARY SOFTWARE

Logiciel propriétaire

Logiciel protégé par le droit d'auteur avec un seul fournisseur qui contrôle sa technologie. Il est principalement non libre et peut être acheté, loué ou sous licence auprès de son éditeur, fournisseur ou développeur. Les logiciels propriétaires sont également appelés logiciels à code source fermé ou logiciels commerciaux.

Q

QUESTION POOL

Pool de questions

Une liste de questions utilisées pour compiler un test, un examen ou une enquête.

R

RETOUR SUR INVESTISSEMENT (ROI)

Un rapport entre le profit réalisé sur un investissement et le coût de l'investissement. Dans les cas des apprenants, le retour sur investissement peut être calculé en comparant le coût de la formation aux résultats tangibles, par exemple le gain de temps des employés, la réduction du turnover des employés, l'amélioration de la qualité des produits, etc., ou en comparant ses coûts aux coûts historiques de la formation en présentiel.

ROLEPLAY

Jeu de rôle

Une méthode d'apprentissage actif ; des exercices interactifs où les apprenants jouent des rôles dans une conversation ou une autre interaction pour explorer des situations réalistes, acquérir de l'expérience et tester différentes stratégies dans un environnement soutenu.

S

SCAFFOLDING

Échafaudage

Un système de soutien qu'un formateur fournit à un apprenant lorsqu'il se lance dans un nouveau concept ou une nouvelle compétence, par exemple, en résolvant un exemple de tâche ou en divisant une tâche en morceaux gérables. Au fur et à mesure que l'apprenant progresse, le besoin de conseils est réduit et le soutien est lentement supprimé afin que l'apprenant puisse continuer sans aide.

SCALABILITY

Évolutivité

Une capacité d'un LMS à gérer plus d'utilisateurs simultanés, plus de cours et plus de demandes sans affecter les performances du système.

SCENARIO-BASED TRAINING

Formation basée sur des scénarios

Une méthode d'apprentissage active utilisant des exercices interactifs où les apprenants sont placés dans des scénarios spécifiques et choisissent leur propre chemin en fonction de leurs choix, également appelés scénarios conditionnels.

SCORM PACKAGE

Paquet SCORM

Un fichier .zip ou un simple répertoire avec le contenu du cours créé pour être téléchargé sur un LMS compatible SCORM. Le paquet typique contient :

Fichier manifeste qui décrit la structure et le contenu du cours pour que le LMS lise et présente correctement le cours.

Run-Time qui indique au LMS comment lancer le contenu et définit comment il communique avec le LMS.

Séquencement - un ensemble de règles et d'attributs pour la navigation de l'apprenant entre les sections du cours, comme les signets et les évaluations de notation.

SELF-DIRECTED LEARNING

Apprentissage autodirigé

Un processus d'apprentissage initié, organisé, mené et évalué par l'apprenant, sans les conseils d'un instructeur.

SELF-PACED LEARNING

Apprentissage à rythme autonome

Le type d'apprentissage en ligne où les apprenants suivent un cours à leur rythme, également appelé apprentissage asynchrone.

SELF-REGULATION

Autorégulation

La capacité d'un apprenant à comprendre et à gérer son comportement et ses réactions aux événements extérieurs et à réguler ses émotions fortes.

SERVICE LEVEL AGREEMENT (SLA)

Accord de niveau de service (SLA)

Un contrat entre un fournisseur de services et un client qui définit les normes de performance et les services à fournir.

SHARABLE CONTENT OBJECT (SCO)

Objet de contenu partageable

Un morceau de contenu d'apprentissage qui communique avec un LMS utilisé pour créer un cours sous la forme du package SCORM.

SHARABLE CONTENT OBJECT REFERENCE MODEL (SCORM)

Modèle de référence des objets de contenu partageable

Spécification et norme de développement d'apprentissage en ligne pour la création de cours transférables et réutilisables, le suivi des progrès de l'apprenant et l'évaluation des scores. SCORM définit la façon dont le contenu d'apprentissage en ligne interagit et communique les résultats vers un LMS. Développé à l'origine sous le nom d'Advanced Distributed Learning (ADL) Initiative par le Bureau du Secrétaire à la Défense des États-Unis, il s'agit désormais de la norme d'apprentissage en ligne la plus couramment utilisée.

SIMULATION

Un scénario simulé créé pour préparer les apprenants à des situations réelles et à la pratique des compétences dans un environnement sans risque ; c'est un équivalent numérique du jeu de rôle en face à face. La simulation peut cibler un système informatique, des machines, un organisme vivant ou une activité, et son objectif principal est de rendre les interactions des utilisateurs aussi réalistes que possible.

SINGLE SIGN-ON (SSO)

Un service d'authentification qui permet aux utilisateurs de se connecter à plusieurs plates-formes à l'aide d'un seul ensemble d'informations d'identification.

SITUATED LEARNING

Apprentissage situé

Une approche d'apprentissage développée par Jean Lave et Etienne Wenger où un apprenant est "situé" dans l'expérience d'apprentissage, par exemple, des sorties sur le terrain ou des stages, et construit ses

connaissances en reliant les connaissances antérieures à un apprentissage contextuel authentique, informel et souvent involontaire .

SKILL GAP ANALYSIS

Analyse des écarts de compétences

Mesurer la différence entre le niveau de compétence actuel d'une personne et celui requis.

SMALL PRIVATE ONLINE COURSES (SPOC)

Petits cours privés en ligne

Une instance localisée d'un cours en ligne ouvert et massif utilisé dans un contexte interentreprises - avec une inscription limitée pour les apprenants individuels ou les petites équipes au sein des organisations.

SOCIAL LEARNING

Apprentissage social

Théorie de l'apprentissage, proposée par Albert Bandura, affirmant que l'apprentissage du comportement humain se fait en observant et en imitant les autres. Et comme nous appliquons ces mécanismes automatiquement et instinctivement, nous apprenons plus efficacement en groupe. Dans l'apprentissage en ligne, le terme fait référence aux technologies et aux stratégies qui intègrent la communication interpersonnelle et la socialisation dans la formation à distance.

SOFTWARE AS A SERVICE (SaaS)

Logiciel en tant que service (SaaS)

Logiciel d'application prêt à l'emploi distribué aux utilisateurs finaux à la demande par un fournisseur de cloud sur Internet, généralement sur la base d'un abonnement. SaaS ne nécessite pas d'installations matérielles locales, de maintenance et de mises à niveau, car il est hébergé en externe par le fournisseur qui prend en charge le développement et la maintenance du logiciel.

SPACED LEARNING

Apprentissage espacé

Une méthode d'apprentissage basée sur la théorie de la "courbe d'oubli" d'Ebbingaus indiquant que la répétition des notions après certains intervalles améliore la rétention des connaissances.

SPÉCIFICATION

En e-learning, approche de développement de contenu ou de logiciel convenue entre plusieurs organismes ou organisations.

STANDARD

Une spécification reconnue par un organisme directeur comme l'IEEE ou l'ISO. Les normes d'apprentissage en ligne populaires incluent SCORM, xAPI et AICC.

STORY-BASED LEARNING

Apprentissage basé sur l'histoire

Une approche d'apprentissage qui utilise la narration comme outil pédagogique. Ce modèle découle du paradigme narratif selon lequel les humains définissent, traitent et organisent leurs expériences et leurs perceptions sous forme de récits, ce qui en fait un moyen efficace de communication, de contextualisation de concepts abstraits et d'échafaudage. Contrairement à la formation basée sur des scénarios qui place l'apprenant dans un cadre construit avec différents parcours, la narration conduit l'apprenant à travers un parcours précis.

STORYBOARD

Un plan, ou un plan directeur, de la conception du cours d'apprentissage décrivant les éléments visuels, textuels et audio, leur séquence, leurs interactions et leur navigation.

SUBJECT MATTER EXPERT (SME)

Un expert dans un sujet traité dans un cours. Des experts en la matière travaillent avec des concepteurs pédagogiques pour développer un contenu précis et engageant.

SUCCESS CASE METHOD

Méthode des cas de réussite

Théorie d'évaluation conçue par Robert Brinkerhoff indiquant qu'il faut évaluer les cas les plus et les moins réussis d'une nouvelle initiative pour déterminer quels facteurs affectent le plus le résultat et comment ils peuvent être exploités pour un plus grand nombre de personnes.

SUCCESSIVE APPROXIMATION MODEL (SAM)

Modèle d'approximation successive (SAM)

Un cadre agile pour les concepteurs pédagogiques et les développeurs de formation. Le modèle SAM de base se compose de trois étapes : préparation, conception itérative et développement itératif, avec des étapes itératives répétées et revisitées pour résoudre les points de difficulté qui se produisent.

SYNCHRONOUS LEARNING

Apprentissage synchrone

Le type d'apprentissage dirigé par un instructeur où tous les apprenants suivent un cours simultanément, en temps réel.

SYSTEM SIMULATION

Simulation de système

Un modèle informatisé d'un système pour s'entraîner à y travailler dans un environnement sûr.

T

TALENT MANAGEMENT SYSTEM (TMS)

Une suite logicielle pour la gestion des talents. Il intègre l'ensemble de la gestion du cycle de vie des talents : recrutement, performance, L&D, rémunération et succession. De plus, un TMS peut être intégré à un système de gestion de l'apprentissage à des fins d'apprentissage et de formation.

TIN CAN API

Ancien nom de xAPI, une spécification d'apprentissage en ligne qui collecte des données sur les activités en ligne et hors ligne des utilisateurs dans un format cohérent lisible pour presque tous les systèmes d'apprentissage en ligne, leur permettant ainsi de communiquer.

TRAINING & DEVELOPMENT (T&D)

Formation et développement

Un sous-ensemble des ressources humaines (RH) qui vise à fournir aux employés les compétences et les connaissances nécessaires pour faire leur travail en planifiant et en organisant la formation des employés et en développant et en évaluant la qualité des programmes de formation de l'entreprise.

TRAINING MODULE

Module de formation

Une section structurée d'un cours qui se concentre sur un objectif ou un sujet spécifique.

V

VIDEO LEARNING

Apprentissage vidéo

La livraison de contenu d'apprentissage au format vidéo.

VIRTUAL CLASSROOM

Salle de classe virtuelle

Un type d'environnement d'apprentissage virtuel pour l'enseignement synchrone, basé sur le Web ou sur logiciel, ce qui signifie que l'apprenant et l'instructeur sont connectés simultanément à l'environnement d'apprentissage virtuel.

VIRTUAL LEARNING ENVIRONMENT

Environnement d'apprentissage virtuel

Un système de plateformes Web et de logiciels spécifiques pour organiser les ressources d'apprentissage, les cours et les utilisateurs, qui couvre tous les aspects du processus d'apprentissage en ligne, de l'interaction entre pairs à l'évaluation des connaissances.

VIRTUAL REALITY (VR)

Réalité virtuelle

Un environnement 3D généré par ordinateur avec lequel l'utilisateur peut interagir via le casque VR et les gants/joysticks. Les technologies VR peuvent être utilisées dans les simulations, l'apprentissage basé sur des scénarios et basé sur le jeu en raison de leur effet d'immersion et sont de plus en plus répandues dans la formation en ligne sur la conformité.

W

WEB-BASED TRAINING (WBT)

Formation sur le web (WBT)

Une formation dispensée via une application Web ou un intranet, également appelée formation sur Internet, apprentissage en ligne, et enseignement à distance.

WEBINAIRE

Un séminaire ou un atelier organisé sur Internet en temps réel.

WHITE-LABEL PRODUCT

Produit en marque blanche

Un produit ou service développé et délivré sous licence par une entreprise et vendu à une autre entreprise qui le personnalise et le rebaptise pour le faire apparaître comme si elle l'avait fabriqué.

WORLD-WIDE WEB CONSORTIUM (W3C)

Une communauté internationale qui développe des normes ouvertes pour HTML, CSS, l'accessibilité Web, et bien d'autres, pour assurer la croissance à long terme du Web.

X

xAPI

Voir Tin Can API ou Experience Application Programming Interface.

XML

Extensible Markup Language, un format textuel utilisé pour décrire des informations structurées : documents, données, configuration, livres, transactions, etc. Il est lisible par l'homme et par machine et permet aux utilisateurs de définir leurs propres balises pour le transfert de données.

Z

ZONE DE DÉVELOPPEMENT PROXIMAL (ZPD)

La différence entre ce qu'un apprenant peut faire avec et sans les conseils de l'instructeur. Le terme "proximal" se rapporte aux compétences que l'étudiant est sur le point de maîtriser. L'échafaudage a lieu dans la zone de développement proximal - à mesure que l'apprenant gagne en compétence, l'instructeur réduit progressivement les conseils jusqu'à ce qu'il puisse effectuer lui-même la tâche.