How hardware and software is used within education.

## Notes section

## Hardware

* Interactive whiteboards
* Tablets and laptops
* Reliable internet connectivity
* Webcam and microphones
* Assistive technologies
* Language Labs
* Servers and storage devices--
* Printers and scanners
* Projectors and interactive displays
* 3D printers

## Software

* Educational technology
* Online education software
* Course management system
* Reference software
* Educational sector-specific tools
* Collaboration tools
* Assistive software
* Interactive software

## Software Examples

* Google classroom
* Kahoot!
* Blackboard Learn
* ClassDojo
* Edmodo
* Quizlet
* Moodle

## Emerging technology

* AI
* AR
* VR
* Gamification
* Adaptive learning systems
* Learning analytics

# Hardware Used

Hardware is now a core part of education. It is a vital tool for teachers, enhancing student learning by providing hands-on experiences and enabling collaborative learning. This helps students gain a deeper understanding and better technical skills. Some examples of educational hardware include interactive whiteboards, which give teachers better control and help students understand the material more effectively; tablets and laptops, which allow students to access online materials and take notes; and reliable internet connectivity, which is essential for students to access online resources.

In education, assistive technology helps people who may face challenges due to disabilities by supporting their learning. Some examples include:

* **Vision:** Magnifiers (help students see learning materials more clearly), screen reading software (allows visually impaired students to read online materials), and refreshable braille displays (translate visual text into braille, though they can be costly).
* **Hearing:** Personal activation systems (amplify sound and deliver it directly to the user’s ear), wireless TV listening systems, and portable closed captioning systems (provide text versions of audio for hearing-impaired individuals).
* **Speech Communication:** Voice amplification systems, speech-generating devices, and fluency assistance devices.
* **Learning, Cognition, and Developmental:** Memory aids, note-taking systems, and audiobooks.

Servers are also a key part of any school or college. They store important information such as allergies, dates of birth, names, guardians’ phone numbers, and more. More schools are increasingly using cloud servers as their main form of storage due to their reduced cost, maintenance requirements, and scalability.

# Software Used

Many learning management systems (LMS) are used in schools. Some examples include Google Classroom, Moodle, and Canvas. These LMS platforms are used to create, deliver, manage, and track online learning materials, offering centralized access that makes it easier for students to find the resources they need.

There are many interactive tools used in education, such as Kahoot!, Quizizz, and video conferencing tools like Zoom and Moodle. Kahoot! and Quizizz are gamified platforms that help increase student engagement.

Collaboration tools are used to facilitate student-teacher interaction and peer collaboration, making it easier for students to work together on tasks. Examples include Microsoft Teams, Google Workspace, and Zoom.

Assistive software supports people with disabilities. Examples include text-to-speech software (for visually impaired individuals), dictation software (which converts speech to text), and eye-tracking software (which uses cameras and algorithms to detect eye movements). These tools help disabled students learn effectively in an educational setting.

# Emerging Technology

Emerging technologies are increasingly utilized in education. Artificial intelligence (AI), for example, can help develop online materials, answer students’ questions outside of school hours with personalized responses, and assist with grading papers. Augmented reality (AR) enhances student learning and engagement. Studies have shown that students using AR were over 200% more confident, learned 4 times faster, and were over 3 times more engaged. Learning analytics, which involves the measurement, collection, and analysis of educational data, also plays a crucial role in improving teaching and learning outcomes.

# Conclusion

In conclusion, both hardware and software are effective tools in education. They support the learning process for students and make lessons more engaging. Hardware mainly serves as a vital tool for teachers and students with disabilities, helping both to teach and learn effectively. Software facilitates collaboration among students, simplifies the creation of online learning materials, and gamifies content to increase engagement. Emerging technologies offer further opportunities to enhance student involvement and assist teachers in delivering quality education.