ICT Multimedia Essentials

Lesson 1: Modern Multimedia

LESSON SKILLS

After completing this lesson, you will be able to:

- Describe constraints to multimedia advancement.
- Identify VR and AR uses in multimedia.
- Explain how AI will change multimedia.
- Describe different multimedia job roles.
- Outline common multimedia career paths.
- Explain the importance of soft skills in multimedia careers.
- Describe copyright and trademark best practices.
- Explain fair use guidelines in multimedia.
- Discuss accessibility considerations in multimedia.

KEY TERMS

accessibility
artificial intelligence (AI)
augmented reality (AR)
career path
copyright
Fair Use
multimedia
privacy
soft skills
trademark
virtual reality (VR)

Points to Ponder

These Points to Ponder are designed to help you focus on key elements in this lesson. They are also suitable for use to spark discussions or individual research.

- What are the challenges that limit multimedia advancement?
- How can VR and AR be used in multimedia?
- How might AI change the future of multimedia?
- What roles exist within the multimedia industry?
- What are the typical career paths in multimedia?
- Why are soft skills important in multimedia careers?
- What are the best practices for copyright and trademark in multimedia?
- What are the guidelines for fair use in multimedia?
- How can we ensure accessibility in multimedia?

Overview

In this lesson, you'll learn about the challenges and new tools in multimedia, like how VR, AR, and AI are changing it. We'll talk about different jobs and career paths in multimedia, and why soft skills are important. You'll also learn the basics of copyright, trademark, and fair use rules, plus why it's important to make multimedia accessible for everyone. By the end, you'll understand what makes the multimedia world work.

Modern Technologies

Objectives
6.1.1: Describe constraints to multimedia advancement.
6.1.2: Identify VR and AR uses in multimedia.
6.1.3: Describe how AI will change multimedia.

There are some really exciting advancements happening in multimedia. Technology is getting better, letting people step into computer-made worlds that feel almost real. We can mix digital images with the real world around us, like adding cool effects to things we see every day. Multimedia is getting smarter by suggesting videos you might like or even helping create movies and games that change based on what you do. These advancements make multimedia more fun, interactive, and personalized, bringing new experiences that weren't possible before.

Figure 1-1: Personalized digital ads

Some things can slow down how fast multimedia can grow. First, making and using advanced technologies is very expensive, so not everyone can afford them. Also, today's computers might not be strong enough to run these technologies well. Not everyone has the newest technology or knows how to use it, which makes it harder for these tools to become common. People might also worry about using new technologies because of privacy or security concerns. Finally, there are worries that these technologies could be misused, like by spreading false information or using data in harmful ways.

The future of reality

There are three new technologies that are changing how we use multimedia. The first one is virtual reality (VR). The second is augmented reality (AR). The third is artificial intelligence (AI). These technologies have grown a lot in the past 12 years. But what are they, and why are they growing so fast?

- VR is a computer-made world where everything looks and feels real, making the user feel like they are inside the scene.
- AR adds virtual details to the real world around us, combining what is real with what is computer-made.
- AI uses computer systems to copy how our brains work, helping machines think and make decisions.

These technologies are still very new but are becoming more popular and advanced. However, for them to be the best they can be, a few things need to happen. The cost of equipment needs to drop. Computers need to get faster. People need to accept these technologies and be ready to pay for them. New rules and laws also need to be made to ensure they are used in a good way.

Figure 1-2 shows how these three technologies have created many new solutions recently.

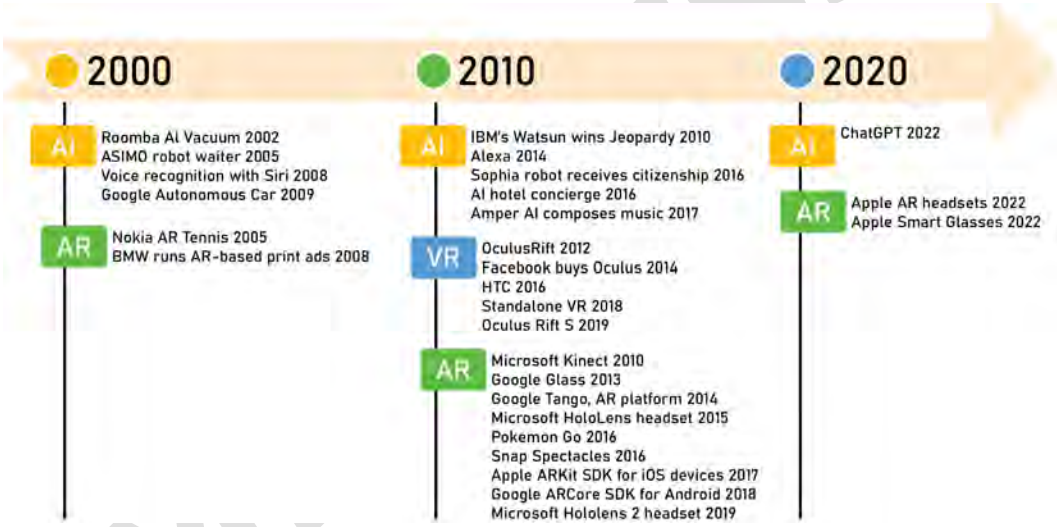


Figure 1-2: Modern technologies timeline

These technologies are expected to keep improving just as fast as they have since the 2000s. They will continue to help in areas like healthcare, security, manufacturing, food, and entertainment.

Link to Learn More

- What is Augmented Reality (AR) In 60 Seconds (YouTube, 1:17)
- Augmented Reality Zoo (YouTube, 4:06)

The future of multimedia

Multimedia is a key driver behind VR and AR. People who use multimedia to share big ideas are always looking for better ways to connect with their audience. With powerful new headsets, today's computers can now run VR and AR, making them a form of immersive multimedia.

Figure 1-3: Oculus Rift S Headset

One company uses VR to create a virtual showroom where customers can use headsets to see how furniture looks in different rooms. They can walk through the "showroom" and view it from different angles. Social media is also using VR to capture the interest of younger generations. In the movie industry, AR is being used to blend the virtual world with the real world, adding a new dimension to films.

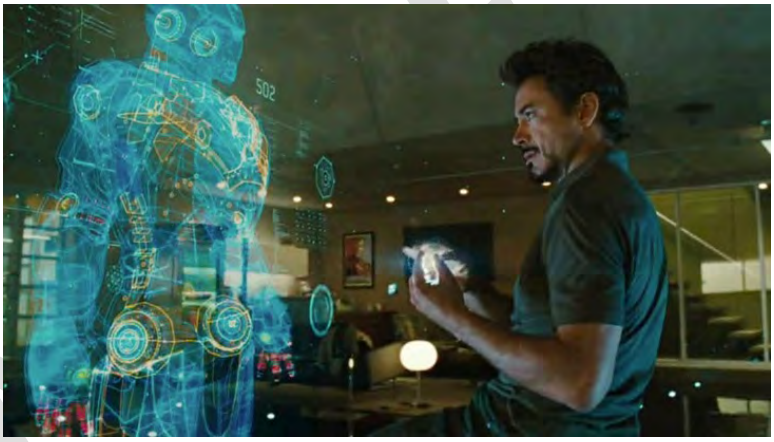


Figure 1-4: AR in Ironman movie

AI is taking multimedia to a new level. It can analyze any type of media, identify objects, and label them. With AI, it's easier to find both old and new content, and media companies can offer personalized video recommendations, like how Netflix does. AI also helps create videos in different languages by syncing an actor's mouth movements with the spoken words. It can even generate subtitles.

Looking ahead

As technology advances, what will multimedia look like in 10 to 20 years? Some experts think "out of this world" vacations will be possible. Movies might become interactive, turning into something you can play like a game. Imagine watching or playing the same movie with friends who are far away! The possibilities

are endless. One thing is clear: careers in multimedia have a bright future. Those who choose this path will be lifelong learners and innovators!

Suggested activities

- Categorizing Modern Technologies (Online)
- What are the Barriers to Modern Multimedia? (Online)
- Impact the Future (Online)

Multimedia Job Roles

Objectives
6.1.4: Describe different multimedia job roles.
6.1.5: Describe common multimedia career paths.

The U.S. Bureau of Labor Statistics says multimedia jobs will increase by 6% by 2031. The average pay for these jobs is around $65,000. The highest-paying job in multimedia is a Technical Writer, earning about $80,050. For five out of the seven jobs listed in Table 4-1, a bachelor's degree is needed. This degree usually takes four years to complete at a college or university.

Table 1-1: U.S. Bureau of Labor Statistics for Multimedia Jobs

Job Title	Description	Education	Average Salary
Sound and Video Technicians	Sets up equipment for recording and playing media.	Associate degree	$54,160
Editors	Checks and fixes drafted content.	Bachelor's degree	$75,020
Camera Operators	Records video.	Bachelor's degree	$65,070
Film and Video Editors	Edits video to share a message.	Bachelor's degree	$65,070
Photographers	Uses equipment to shoot, edit, and store images digitally.	High school diploma	$40,760
Technical Writers	Writes instruction manuals and guides to explain complex information.	Bachelor's degree	$80,050
Writers and Authors	Creates written content for media.	Bachelor's degree	$73,690

Multimedia Career Path

A career path is like a roadmap that guides a person through their job journey, from entry-level roles to management. As someone gains experience, they get ready for the next job on their career path.

Entry-level jobs in a Multimedia career path require some education and basic skills. As a person faces new challenges at work, their skills grow, and they gain the experience needed to move up to the next job on their path.

Figure 1-5: A video cameraman

Figures 1-6 and 1-7 show two multimedia career paths. The smallest circle represents the entry-level job, often a person's first professional role. The largest ring shows the top position in that career path.

Figure 1-6: Graphic designer career path

Figure 1-7: Video editor career path

If someone meets job expectations, they can expect a promotion within two to five years. However, switching to a different career path is rare without more education and training because each path requires different technical skills.

Suggested Activity

- Identify Multimedia Jobs (Online)
- Build a Career Path (Online)

Essential Soft Skills

Objectives
6.1.6: Describe the importance of soft skills in multimedia careers.

Every multimedia job needs people with both technical and soft skills. These skills affect each other. Technical skills are hard to learn without practice, which takes self-discipline. Learning also requires being open to listening to others. These qualities are known as soft skills.

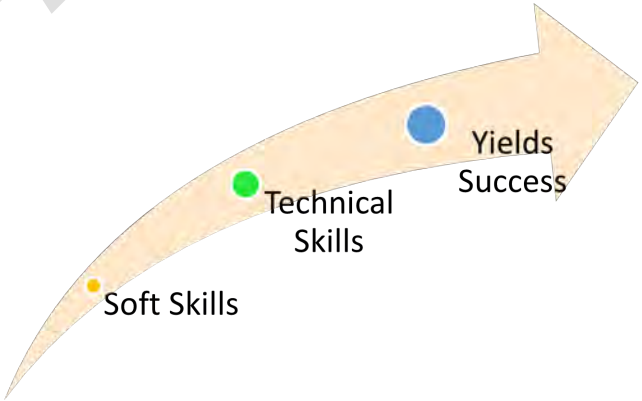


Figure 1-8: Path to Success

Soft skills include everything needed to work well alone and with others. Table 1-2 lists common soft skills required for jobs.

Table 1-2: Common soft skills valued by managers

Soft Skill	Description
Communication	This skill involves listening and speaking well with others, along with creating visual aids and reports.
Critical Thinking	This skill involves observing carefully and asking good questions. Often, a person or team will brainstorm and organize ideas. Creative thinking and flexibility are part of this soft skill.
Leadership	Leadership is about finding good solutions. A leader inspires others and is willing to coach.
Positive Attitude	This skill is crucial for meeting deadlines. A positive attitude shows energy and respect for others.
Teamwork	Teamwork means being aware of others. A good team player shows empathy, listens well, and uses positive persuasion to help the team reach its goals.
Work Ethic	Work ethic means being responsible and doing your best at your job. It includes being on time, working hard, and making sure your work is high quality.

The goal of multimedia jobs is to create videos, images, blogs, or presentations that meet a communication need. To achieve these goals, a team is usually needed, with each person handling tasks that match their skills. It's important for every team member to have good soft skills so they can work well together and meet project deadlines.

Figure 1-9: Project team

Suggested Activity

- Picturing Soft Skills (Online)

Copyright, Trademark and Fair Use

Objective
6.1.7: Describe copyright and trademark best practices.
6.1.8: Describe fair use guidelines in multimedia.

Multimedia projects often use creative works made by others, so it's important to follow copyright and trademark laws.

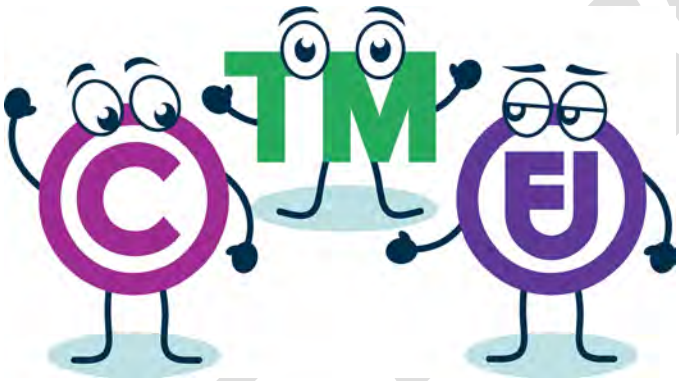


Figure 1-10: Copyright, Trademark and Fair Use logos

Copyright protects original works like documents, images, or music. It gives the creator the right to control how their work is used. The owner's permissions are found in a copyright license. Some owners charge for their work, while others share it freely. If someone uses copyrighted material without permission, they can be sued.

In certain cases, copyrighted works can be used without permission under Fair Use. This usually applies when a small part is used for reviews or reports, like quoting from a book.

A trademark is a logo, phrase, or word used by an organization to help people recognize their products or services. Once registered with the government, it's legally protected. Using a trademark without permission can also lead to a lawsuit.

What can you use in your multimedia project?

- **Photographs or illustrations:** You can use between one and five works by the same artist without asking permission.
- **Music:** You can use up to 10% or 30 seconds of a song without permission.
- **Video clips:** You can use up to 10% or three minutes (whichever is less) of a video without permission.

- **Text materials:** You can use the following without permission:
  - A poem with less than 250 words
  - Up to 250 words from a longer poem
  - Articles, stories, or essays under 2,500 words
  - 10% of a longer work or up to 1,000 words
  - One chart, picture, diagram, graph, cartoon, or picture per book, encyclopedia, newspaper, or magazine
  - Two pages from a picture book with less than 2,500 words

To use more, ask for permission. Always include a bibliography for any work you use.

Suggested Activity

- Running the Numbers of Copyright (Online)

Accessibility and Multimedia

Objective
6.1.9: Describe accessibility considerations in multimedia.

Accessibility means everyone, no matter their limitations, should have access to the same experience. The Americans with Disabilities Act (ADA) is a law updated in 2010 that ensures people with disabilities have the right to receive the same information as everyone else. For example, using alternative text to describe images allows text-to-speech software to read it to those with vision problems, or it can be printed in Braille. The Perkins School for the Blind (2023) offers tips on creating accessible multimedia.

Figure 1-11: Accessibility

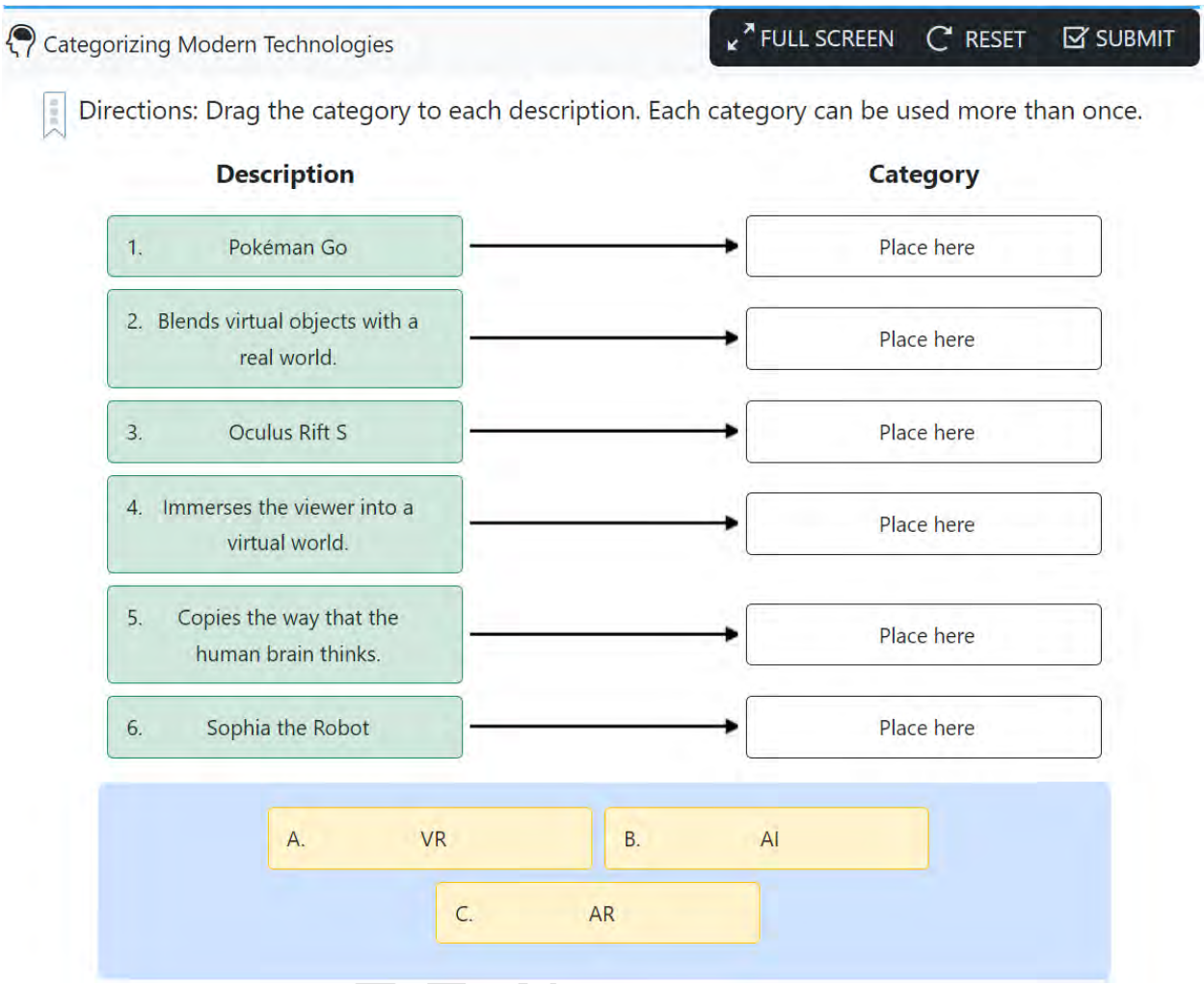
When creating multimedia, like videos or websites, here are some things to think about:

- **Text for videos:** Add captions to videos so people who can't hear can still understand what is being said.
- **Clear and simple:** Use easy words and simple designs, so everyone can follow along.
- **Contrast colors:** Make sure there's a big difference between text color and background color, so it's easy to read.
- **Voice descriptions:** For pictures or videos, use alternative text to describe what's happening to allow text-to-speech software to read it for people who can't see.
- **Easy controls:** Make sure buttons and links are easy to click, even for people who have trouble using a mouse or keyboard.

By thinking about these things, we make sure everyone can use and enjoy multimedia.

Suggested Activity

- Accessibility Jeopardy (Online)



What are the Barriers to Modern Multimedia?

This activity is also available as an online activity. This PDF is provided for those who wish to print it and distribute it to students who don't have access to the online course.

Directions: Determine if each characteristic is a barrier or not a barrier of modern multimedia.

Characteristics	Barrier	Not a Barrier
Processing power	☐	☐
Cost of hardware	☐	☐
Technical abilities	☐	☐
Society accepting solutions	☐	☐
Proven solutions that currently exist	☐	☐
Guidelines and laws governing ethical solutions	☐	☐

Lesson 1 Quiz

Mark the correct response for each question.

1. _____ is a computer-created world that looks and feels real, making the user feel as if they are part of the scene.

- a. Augmented Reality
- b. Virtual Reality
- c. Physical Reality
- d. Artificial Intelligence

2. How will modern technology affect multimedia in the future?

- a. Movies will be more interactive.
- b. Social media will not be used as often.
- c. The themes of movies will be boring.
- d. Video entertainment will only allow team-based games.

3. Which of the following describes a benefit of using AI in multimedia?

- a. Shorter time to edit video segments.
- b. Shorter time to produce a movie in multiple languages.
- c. It takes a long time to complete the pre-production phase.
- d. It is easier and faster to post videos for public access.

4. Which of the following modern technologies can generate subtitles?

- a. Virtual Reality
- b. Interactive Multimedia
- c. Augmented Reality
- d. Artificial Intelligence

5. Which of the following is an example of how Netflix is using AI?

- a. Changing the color scheme based on the viewer's age.
- b. Creating personalized video recommendations.
- c. Charging less money for adults over 70 years of age.
- d. Supporting account password sharing among friends.

