

Digital Transformation in Classroom: + Coding

교실수업의디지털혁신: 코딩더하기



Speaker:

Miran Kim

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Date & time: 11a.m. ~ 12:30 p.m. 5.31 (Fri), 2024

About: Miran Kim

Associate Professor, Dept. of English Education, GNU

- Ph.D in linguistics (Phonetics & Phonology)
- Spoken language research
- Digital literacy training for English major students (Recent interest)

+ Coding

Python

Python is a high-level, interpreted programming language known for its readability and versatility. It's widely used for web development, data analysis, AI, and automation.

The index can be used to check whether your programming skills are still up to date or to make a strategic decision about what programming language should be adopted when starting to build a new software system. The definition of the TIOBE index can be found [here](#).

May 2024	May 2023	Change	Programming Language	Ratings	Change
1	1		 Python	16.33%	+2.88%
2	2		 C	9.98%	-3.37%
3	4	▲	 C++	9.53%	-2.43%
4	3	▼	 Java	8.69%	-3.53%
5	5		 C#	6.49%	-0.94%
6	7	▲	 JavaScript	3.01%	+0.57%
7	6	▼	 Visual Basic	2.01%	-1.83%
8	12	▲	 Go	1.60%	+0.61%
9	9		 SQL	1.44%	-0.03%

2. 5 개월 후

Coding to classroom

[Class_Spring2022](#) Public

Config files for my GitHub profile.

config

github-config

● Jupyter Notebook Updated last month

"Digital Literacy and English Education (Spring 2023, 2024)"



Overview

Part 1. Technology to classroom?

Part 2. Multimodality and education

Part 3. Coding to the classroom (Coding samples)

Part 1. Technology to Classroom . . . ?

Transforming lives: The impact of tools



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아들:

이것으로 조선 여인들이 더 이상
아궁이에 불이 꺼질까 노심초사
할 일이 없어질 수 있는데, 쓸 데
없는 물건이라니요!!

양반아버지: 이런 요상한 물건이 뭐가
대단하단 말이냐? 참 쓸데없는 것을
배워 왔구나.



Transforming lives: The impact of tools

- **Wheel** (circa 3500 BCE) - Fundamental innovation for transportation and trade, crucial for early human development.
- **The Compass** (11C): Essential innovation for navigation and exploration, pivotal for maritime advancements and trade.
- **Printing Press** (Mid 15C) - Revolutionized information dissemination, boosting literacy and knowledge spread during the Renaissance.



Transforming lives: The impact of **Digital Tools & AI robots**



동아일보
리뷰] '스마트보드'로 진화한 전자칠판...



 The Robot Report
<https://www.therobotreport.com › spyce-closes-original...> ::

Spyce closes original robotic restaurant in Boston

Oct 19, 2021 — Spyce, a Boston-based startup that developed a robotic kitchen, is shutting down its original restaurant location in Boston's Downtown ...



 AI Business
<https://aibusines.com › verticals › boston-restaurant-enl...> ::

Boston restaurant enlists the help of robotic salad makers

May 2, 2022 — Boston-based Mediterranean restaurant Bonapita has enlisted the help of robots from Dexai to automate the preparation of salads. Dexai's unit – ...



 Washington Post
<https://www.washingtonpost.com › news › 2018/05/17...> ::

The Boston restaurant where robots have replaced the chefs

May 17, 2018 — Spyce bills itself as “the world’s first restaurant featuring a robotic kitchen that cooks complex meals,” a distinction that appears to ...



AI era



Technological advances take **significantly longer to integrate** into educational settings.

With classroom changes lagging, how can schools enhance students' ability to adapt to society?

1. Online learning and digital literacy



- What: e.g., Digital literacy skills. Students must learn to navigate online resources, evaluate information credibility, and use digital tools responsibly.
- How: e.g., Blended learning models. traditional classroom instruction and online resources



2. Data analysis and interpretation

- What: e.g., Data science education, including data analysis, interpretation, and visualization in the curriculum. Students learn to handle large datasets, use statistical tools, and derive meaningful insights.
 - How: e.g., Educators use tools like Excel, Python, and data visualization software to teach data analysis. Students work on real-world projects, analyzing datasets relevant to their interests.

3. AI and computational thinking



- What: e.g., New curriculum content. The rise of technology has made coding and computational thinking essential skills. Schools now include programming languages, algorithmic thinking, and problem-solving as part of their curriculum.
- How: e.g., Interactive learning tools. Educators use interactive platforms like Scratch, Colab, Github, and generative AIs (e.g., ChatGPT). Effective teaching requires integrating coding into real-world problem-solving scenarios, fostering creativity, and encouraging collaboration.

Technology in the classroom?

- Technological changes significantly impact **what to teach** and **how to teach**, shaping educational content and delivery methods.

Generative AIs

(2022~)



Hardware

Software



**Education
(Classroom)**

Software Education

Can you imagine?

Black Mirror

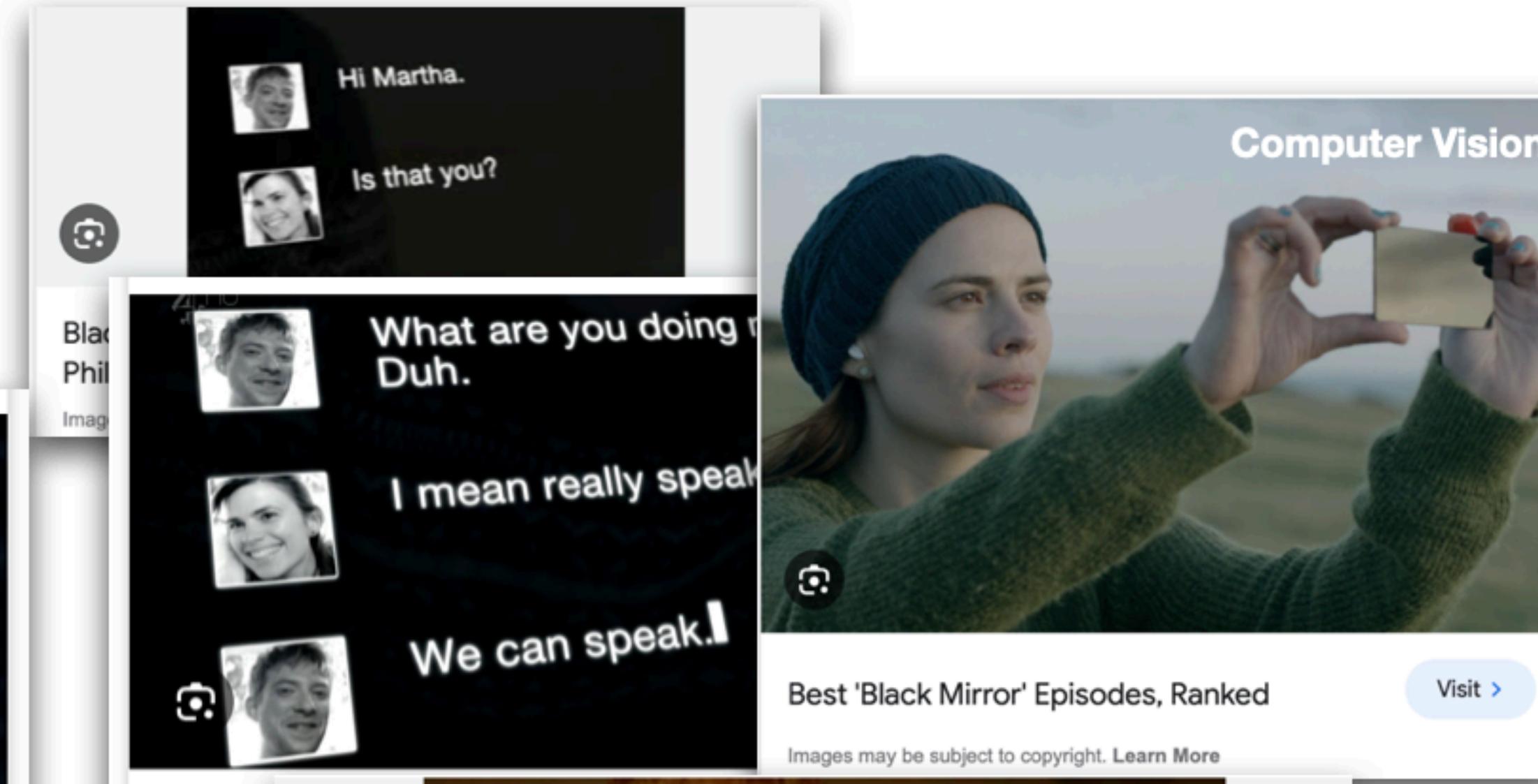
(6 Series; 2011~2023)



Black Mirror' Study Guide: Be Right Back | by Howard Chai | Medium

Visit >

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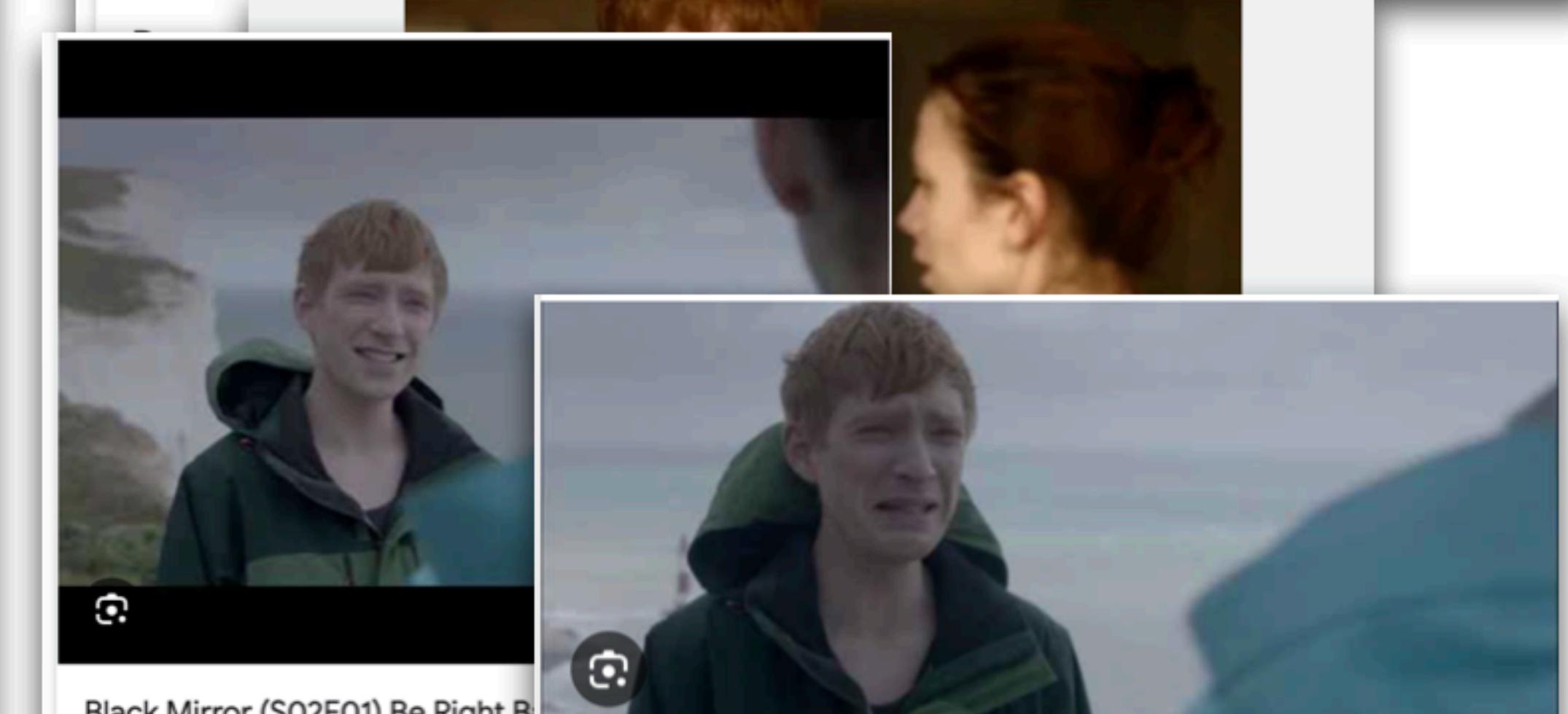
Hi Martha.
Is that you?
What are you doing?
Duh.
I mean really speak!
We can speak!

Black Mirror (S02E01) Be Right Back Scene - YouTube

Best 'Black Mirror' Episodes, Ranked

Visit >

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Black Mirror: A Look at Modern Day Paranoia | The Artifice

Visit >



계정



대시보드



과목



캘린더



메시지함



마이페이지



전체게시물



이용안내

대시보드

⋮

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[꿈·미래개척\(546분반\)](#)
[꿈·미래개척\(546분반\)](#)
[2024년 1학기\(경상국립대학교\)](#)

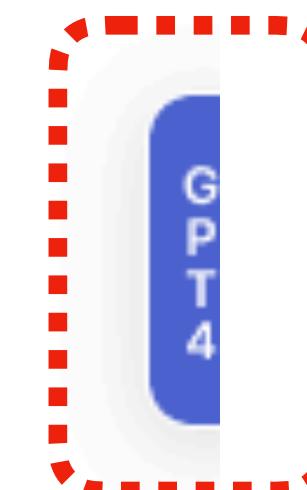
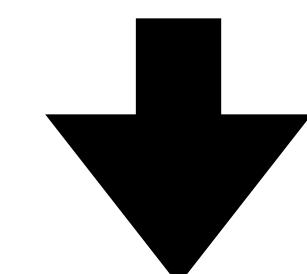
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[디지털리터러시와영어교육\(001…](#)
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⋮

⋮

2024. 5월부터

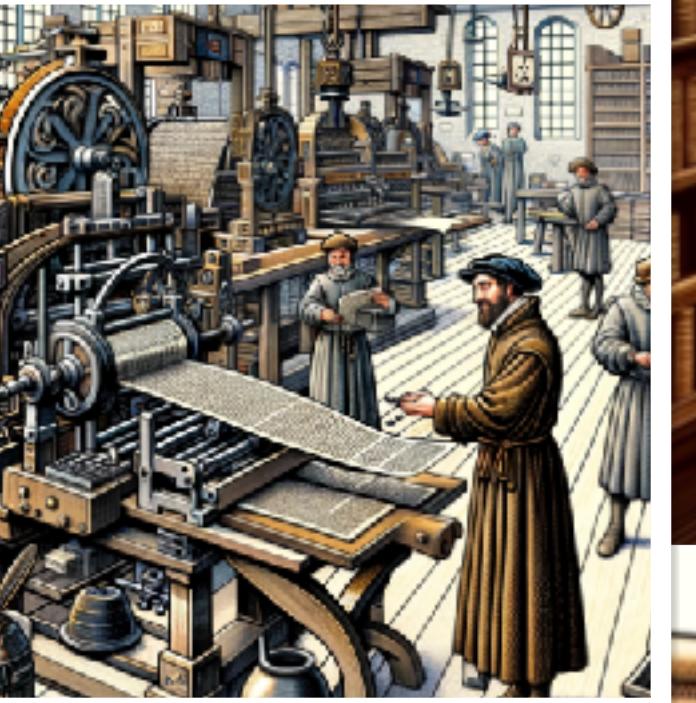


G
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4

Part 2. Multimodality and Education

Written text

- Expression of ideas
- Record keeping
- Preservation of knowledge
- Communication
- Education and
- Scientific and advancement



Cuneiform Script, British Museum, London 2005. <http://www.britishmuseum.org>
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3500 BCD

15C

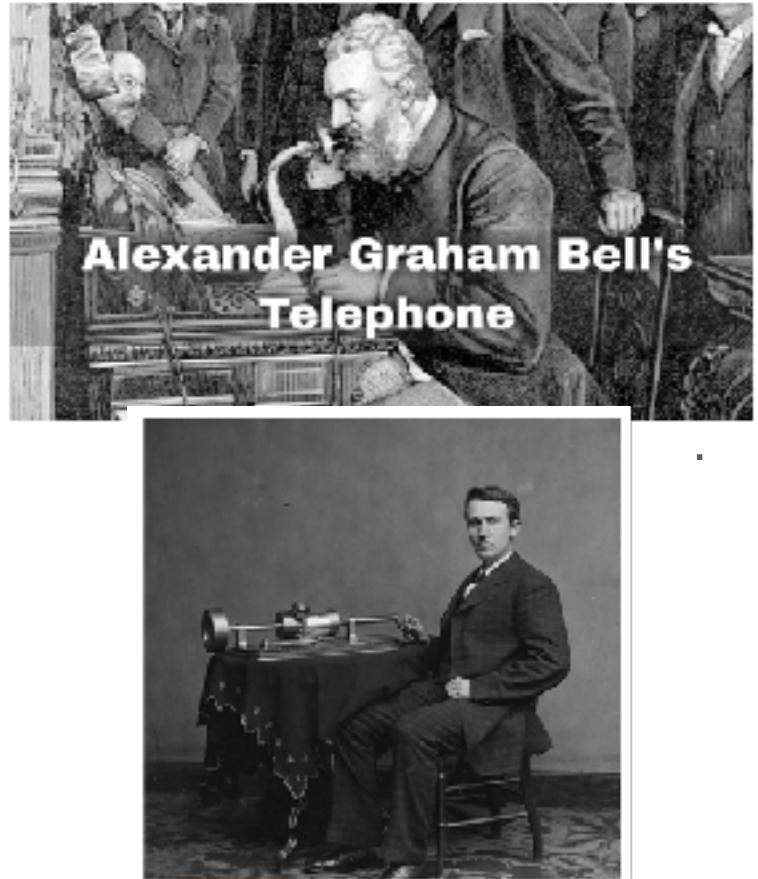
2024

Printing press

15C

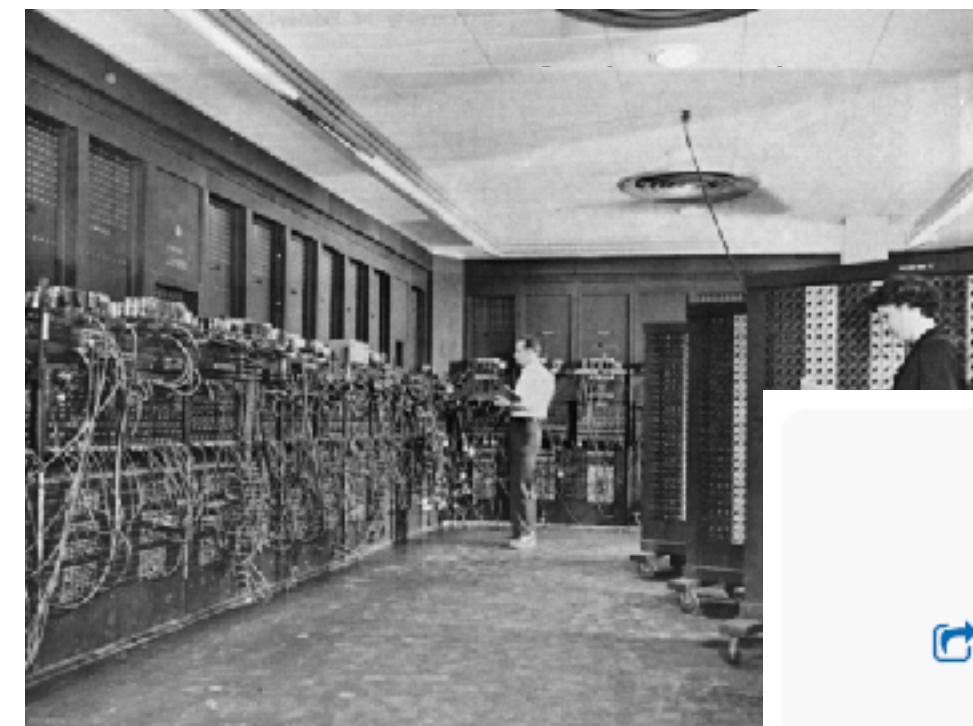
Audio technology

19C



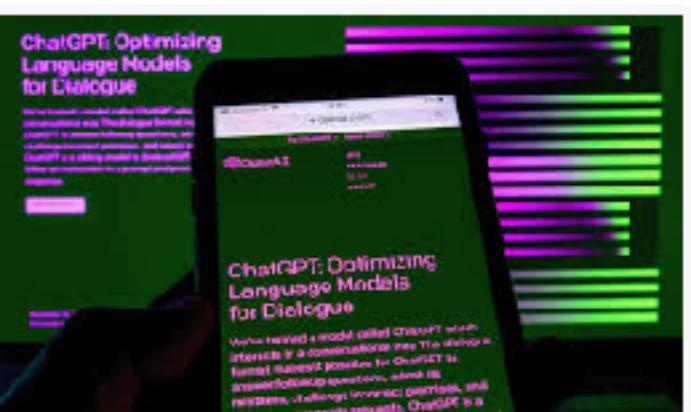
Imaging technology

20C



Digital technology

21C



AI technology

2022

2024



Analogue to Digital > **Multi-modality ~ AI era**

Films





ChatGPT 4o ▾



MI

How to learn



Here is the image contrasting writing an essay report with a pencil on the left and typing on a laptop on the right. The left side features a traditional, analog approach, while the right side showcases a modern, digital method.

“The illiterate of the 21st century will not be those who cannot read and write, but those who cannot ***learn, unlearn, and relearn.***”

- 21세기 문맹은 단순히 읽고, 쓰지 못함이 아니라
(새로운 것을) 배우고, 고쳐 배우고, 다시 배울 수 없는 인간이다.

Alvin Toffler (1928~2016)
American writer and futurist, *Rethinking the Future* (1997)



DIGITAL LITERACY

e.g., Paul Glister (1997)

... the ability to understand and use **information in multiple formats** from a wide range of sources when it is presented via computers.

It encompasses **a set of skills** necessary for effectively **navigating, evaluating, and creating information** using digital technologies.

These skills include **critical thinking, effective communication**, and the ability to **assess the credibility and relevance of digital content**.

Digital literacy also involves understanding **how digital tools and platforms operate** and **how to use them responsibly and ethically**.

Part 3. Coding to the classroom . . .



Give it a try!

Class App

QR Code Generator

Paste a link and generate its QR code.

link

output



Clear

Submit

Use via API  · Built with Gradio 

Go to Main

“Any **sufficiently advanced technology** is
indistinguishable from magic.”

Arthur C. Clarke (1928~2016)
British science fiction writer, e.g., *A Space Odyssey* (2001)