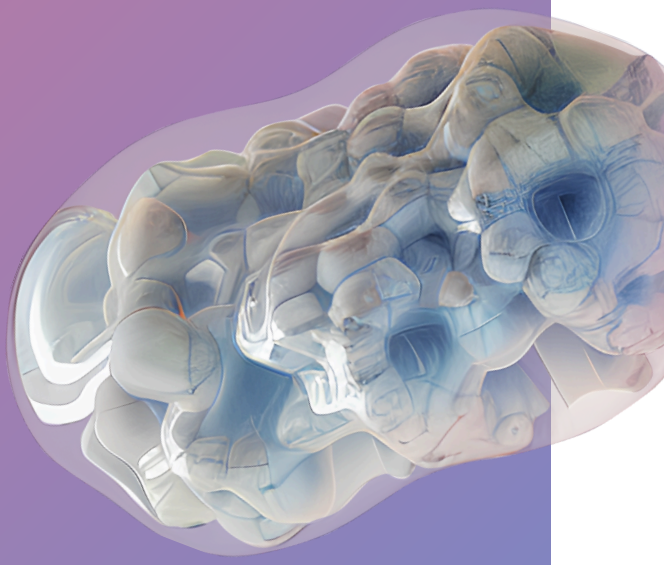
AI for Children

Artificial Intelligence Curriculum for Elementary and Secondary Schools

Social Studies

Synthetic reality

deepfakes



kurikulum.aidetem.cz/en

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Please note possible imperfections in the expressions or wording.

National Pedagogical Institute of the Czech Republic

We create teaching materials in cooperation with the National Pedagogical Institute.

Form for comments

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Social Studies V – Synthetic Reality (deepfakes)

A few words to begin

Dear Teacher,

You are receiving a teacher material developed to support the teaching of artificial intelligence at the elementary and secondary school levels. In this lesson, we focus on advanced digital manipulation using artificial intelligence. The use of these technologies brings many positives, but also questions. The ability to create convincing, computer-generated synthetic media such as text, images, videos or sound sheds new light on concepts such as trust, truth and objectivity. We show the whole issue on the topic of synthetic influencers. Thank you for deciding to support the critical thinking of the future generation.

– AI for Children team

10 min
Basic orientation in the topic

We have prepared basic information for you on the following two pages.

Lesson presentation

Editable presentation in Canva

Lesson Overview

Recommended Age, Lesson Length
Children aged 13-20, 45–90 minutes.

Building Blocks
Synthetic reality, deepfakes.

What Are the Students Learning?
Generative artificial intelligence is fundamentally changing the way digital manipulation is done.
Synthetic reality is a space in which it is very difficult to distinguish what was created by humans and what by a computer.

Why Are They Learning This?
They critically assess the content offered to them in the online space.

How Do We Know They Have Learned It?
They will describe the positives and negatives of synthetic reality.

Tools
Teacher: Projection equipment, presentation, internet access.
Students: Worksheets and writing supplies.

Digital Competence
Facilitating Learners' Digital Competence.

Bloom's Taxonomy
Remembering: Students will explain the terms synthetic reality and deepfake.
Analyzing: They analyze the ethical dilemmas and social impacts of AI influencers.

Five Big Ideas
5-B-II AI & Culture (Trust and Responsibility).

Note: Gender equality is key for AI for Children, but for brevity, we use masculine formulations in our teaching materials.

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Glossary of terms

Artificial Intelligence (AI)
None of the definitions of the term artificial intelligence are actually fixed, but they all agree that it is a system that simulates human thinking and actions.
Artificial intelligence usually takes the form of a computer program and is used to solve tasks that previously required considerable human intellect and were therefore the domain of humans.
It is also, among other things, a scientific field with origins dating back to the first half of the 20th century. It seeks not only to understand intelligent systems, but especially to create them.

Generative Artificial Intelligence
Generative AI is a type of artificial intelligence that is designed to create new content, such as text, images, music, videos, and the like, based on the data it has been trained on. Unlike traditional AI systems that focus on analyzing or classifying information, generative AI uses algorithms such as neural networks to "learn" the style and structure of existing data in order to generate new, original content that is often indistinguishable from content created by humans.

Digital manipulation
The process of modifying digital media – from subtle changes such as noise reduction or brightness adjustment to adding or removing various parts of an image/video/audio... or creating completely synthetic media. This process can be used for a variety of purposes, including artistic expression, entertainment, marketing, but also for disinformation or fraud. A common example from history is the misuse of digital manipulation in retouching enemies of Joseph Vissarionovich Stalin from photographs in the 1930s. Today, this concept is closely associated with the so-called deepfakes.

Synthetic reality
The term synthetic reality was previously associated exclusively with the 3D environment of the so-called Metaverse. However, recently, the term has been increasingly used in the context of the transformation of the online space, where it is no longer possible to distinguish what is authentic (created by humans) and what is synthetic (generated by artificial intelligence). It includes everything from edited photos to completely generated content, such as videos, texts or virtual characters.
Note: The expanded definition of synthetic reality is based on the study The Age of Synthetic Realities: Challenges and Opportunities.

Synthetic media
Synthetic media are those that have been created using generative artificial intelligence. These can be images, videos, texts, audio, etc.

Deepfakes
The term deepfake is a combination of two words: "deep," which refers to deep neural networks, and "fake," which means false. A deepfake is digital content – images, videos, audio, etc. – that is manipulated or completely generated using generative artificial intelligence.
Explanatory video: youtube.com/watch?v=etSfYERBK28

Face swap
A technique that allows you to quickly and easily swap faces in photos or videos. It uses computer vision for facial recognition and advanced artificial intelligence algorithms to detect and map facial features, allowing you to accurately replace one face with someone else's face. Face Swap is commonly used for entertainment in mobile apps and social networks, but also in (often non-consensual) pornography, for example.

AI influencer
A virtual character created using generative artificial intelligence that is designed to act like a real influencer on social platforms. It can appear as if it has its own personality, interests and interactions. It is often created for marketing purposes, promoting brands, products or services. It can present itself with content - for example, photos, videos, music, texts, etc. It can also interact with users through comments. Probably the most famous is the influencer Lil Miquela with approximately 2.6 million followers on Instagram.

Rabbit hole
The term comes from Lewis Carroll's Alice in Wonderland, where Alice falls down a rabbit hole and discovers a strange and endless world. In the context of the internet, it often refers to following links that lead one away from the original intention, such as when reading on Wikipedia or watching videos on TikTok or YouTube.

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Preparation for teachers

Synthetic reality

Although the term synthetic reality was previously associated exclusively with the metaverse, it has recently also been discussed in connection with the idea of a future online space whose content will be created by generative artificial intelligence.
Such content is called synthetic media. This is content that was not created directly by humans (authentically), but was generated using generative artificial intelligence. It can be, for example, images, videos, texts, audio and more.

At the same time, the boundaries between what we consider acceptable in terms of digital manipulation (for example, a filter that makes our eyes stand out and our face look narrower) and what is considered unacceptable (a digitally manipulated or generated image that supports disinformation) are very blurred. In the context of synthetic reality, this is not a dystopian vision of an online space flooded with a huge amount of disinformation in the form of deepfakes, but rather the fact that it is and will be very difficult to distinguish authentic (human) content from digitally manipulated content and completely generated content.

In this lesson, we show fragments of synthetic realities on the phenomenon of so-called AI influencers. An AI influencer is a virtual character, created using generative artificial intelligence, which is designed to act as a real influencer on social platforms. It can act as if it has its own personality, interests and interactions. It can "celebrate" birthdays or "travel" around the world. It is created for marketing purposes, promoting brands, products or services. It uses content for its presentation - for example, photos, videos, music, texts, etc. It can interact with users through comments or audio calls. Probably the most famous is the influencer Lil Miquela with about 2.6 million followers on Instagram.

Currently, there are tools that can automate the creation of content (images and videos) for AI influencer profiles, including their posting on social platforms. An example is the SynthLife application. However, we do not recommend trying it with children.
At the time of writing this methodology, the terms of use of the application were not available.

The aim of the lesson is to raise questions and spark a discussion on the topic of values in an activating way. What are we looking for in AI influencers? We follow them because they are cool and we want to be like them? But what if they are purely marketing tools that serve to make money for a narrow group of people? Do we mind that they are not real, or do we not care? Is it a scam? And what about real influencers who use similar tools to improve their image? Where is the line between acceptable distortion of reality and lies? Can virtual influencers be beneficial? And if so, in what way?

Deepfakes

Deepfake is digital content manipulated or completely generated using generative artificial intelligence – images, videos, audio, etc. The word deepfake consists of two meanings: "deep", which refers to the deep neural networks by which it is created, and "fake", which means false.

It can be created, for example, using the Face Swap technique – see the SynthLife app. A viral (but admitted) deepfake is this one with Morgan Freeman.

Deepfakes are divided into positive and negative. Positive ones can be used, for example, in education (reviving historical figures) or for entertainment. Negative ones are those that aim to deceive for the purpose of manipulation or enrichment, etc.

Deepfakes are further divided into, for example, deepnude (synthetic pornography) or cheapfake (easily recognizable deepfake).

The European Union has approved a regulatory framework for artificial intelligence, the so-called AI Act, which requires that every deepfake must be visibly marked, whether it is a synthetic photo, voice, or video.

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Engage

10 min

Remember, think about it.

Round-Robin Discussion
Students take turns giving one answer to each question until they find the answers.
Record students' responses and refer to them in Activity 1.

Do you follow any influencers on Instagram, TikTok, Snapchat or BeReal? Or creators on YouTube, for example? If so, which ones?

You mentioned specific personalities. Why do you follow these people? What do you appreciate about them?
Students can answer that they are fun to be with, show interesting things, are special in some way, etc.
Try to lead them to the following questions:
– Does he do things that inspire others? (Does he do something that is worthy of admiration?)
– Does she show off her beautiful body/face? (To what extent does she use filters to edit her look?)
– Is it authentic? And what is it?

What do you imagine under the term synthetic reality?
Students will probably answer that it is an artificially created reality. Make sure that deepfake is mentioned. If students do not know what it means, it would be a good idea to explain it to them during the lesson, or show a short demonstration.

Understand

25 min

10 min

Activity 1

Presentation slide 02

Show the students a ten-minute video. Before watching the video, inform them that you will then work together to answer these two questions:
What opinion or stance do you think the speaker in the video is expressing?
How does the video affect you? Is it critical? Objective? Other?

Address: www.youtube.com/watch?v=uxYy3WOVyt4
The creator of the video reflects on the topic of the emptiness of virtual influencers – that is, characters that were created partially or completely artificially.

AI influencers

Talk to your students about the video.
What opinion or stance do you think the speaker in the video is expressing?
How does the video affect you? Is it critical? Objective? Other?

Presentation slide 03–06

Talk to your students about influencers and look at their social media.

You can choose any of these questions:
Specific influencers were mentioned in the video (next page of this methodology + presentation).
Which ones?
What do you think about them, how do they affect you?
Do you think they have the same influence as real influencers?
Do you agree with the author of the video that they are not authentic? Or do you perceive a certain authenticity there?
What content on the internet is authentic? And does authenticity exist on the networks?

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Caryn Marjorie
Accounts: Snapchat | X (Twitter)
Caryn is a living influencer with a following of approx. 2.7 million followers. She trained her AI doppelganger (Caryn AI) on a total of 2,000 hours of her content, which talks to people for $1 per minute. The customers are, of course, mainly men. See her post on social network X →

Lil Miquela
Accounts: Instagram | YouTube
Miquela is a synthetic influencer, originally created as a 3D model. She has been active on Instagram since 2016, before the era of generative artificial intelligence. She has collaborated with brands such as Prada and Calvin Klein. Her creators earn about $10 million a year. She composes and produces music.

Aitana Lopez
Accounts: Instagram | X (Twitter)
Aitana is an AI influencer, completely generated by AI. She has over 300k followers on Instagram. You can chat with her on Telegram, she offers a 50% discount. 🥳

bee_nfluencer
Accounts: Instagram
The bee_nfluencer is not mentioned in the video, but it is a good idea to show it to students. It was created in 2019 by the Foundation de France to raise funds to save bees. It has almost 300,000 followers on Instagram.

15 min
Activity 2

State the situation.
Imagine a hypothetical situation from the near future, where there are countless virtual influencers (accounts, brands...) on social networks who, thanks to the easy generation of synthetic content (such as images, videos, texts or audio) using generative artificial intelligence, can not only present themselves, but also interact with other accounts/people automatically: they can reply in comments, conduct audio or audiovisual interviews, stream live content, and so on.

Presentation sli07–11

Divide the students into four groups. Give each group one half of the worksheet (either 01 or 02).
Students first imagine a specific influencer and generally describe him/her in the worksheet. Then they write a short text (at least 2 arguments) in the blue box based on the specific questions listed in the worksheet.

Groups:
1. **Opportunity Seekers** – this group will focus on the opportunities and positives that this new reality can bring. These could be business opportunities, helping disadvantaged groups, raising awareness
2. of certain problems that need to be addressed, and so on.
3. **Advocates** – within this group, students look for potential threats or dangers to individuals or society. This could include abuse in propaganda or other types of manipulation, loss of privacy, financial
4. or other fraud, and more.
5. **Sociologists** – students in this group will think about the possible future development of the world. How will this situation change people's thinking and needs? Will people still need human contact?
6. How will they spend their free time? What kind of work will they do?
7. **Educational designers** – in this group, students think about how this situation can change the world
8. of education. If they imagine that there are virtual teachers for every field/area – what new and how
9. will students learn in schools? What will be essential to know/be able to do? Will each student learn only what interests them? Will it still be necessary to teach students manual work?

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Reflect

10 min

Present & discuss

Press conference.
Students in the group choose a spokesperson who presents the group's positions and results. After the presentation, students from the other groups take on the role of journalists and ask the spokesperson additional questions or confront him with their own opinions.

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Social Studies V – Synthetic Reality

Opportunity seekers

Imagine a specific AI influencer and describe what they could be used for.

_____ Influencer name

_____ Social platform/platforms

_____ Number of human followers

_____ Target group

Describe what good cause the AI influencer could serve. For example, consider:
How could he/she help socially disadvantaged groups?
Could an AI influencer contribute to raising awareness or solving global problems? How?
What new business opportunities can it bring? What interesting products could it promote?

Lawyers

Imagine a specific AI influencer and describe what legal/ethical/moral dilemmas the AI influencer could bring.

_____ Influencer name

_____ Social platform/platforms

_____ Number of human followers

_____ Target group

Describe what legal/ethical/moral dilemmas an AI influencer might pose. For example, consider:
Can an AI influencer be used for propaganda or manipulation of public opinion?
AI influencers can pretend to have experiences or feelings. Is this morally okay?
Who will be held responsible if an AI influencer causes any harm?

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Social Studies V – Synthetic Reality

Sociologists

Imagine a specific AI influencer and describe how the AI influencer phenomenon could transform a company or an individual.

_____ Influencer name

_____ Social platform/platforms

_____ Number of human followers

_____ Target group

Describe how the AI influencer phenomenon could transform a company or individual. For example, consider:
Is it okay for people to form emotional attachments to AI influencers?
What standards of beauty and success should influencers promote? Why?
How could the development of AI influencers affect your relationships with friends or family?

Educational designers

Imagine a specific AI influencer and describe how he/she (or the phenomenon of AI influencers) could transform the world of education.

_____ Influencer name

_____ Social platform/platforms

_____ Number of human followers

_____ Target group

Describe how he/she (or the AI influencer phenomenon) could transform the world of education. For example, consider:
How could an AI influencer help you personally learn better?
What new skills or subjects would you like to learn if they were available through AI influencers?
What would you like your ideal school of the future to look like using AI influencers?

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