

Activity 3.1.1 - AI for good: The (potential) positive impact of AI technologies on social life and global issues

Estimated duration	40 minutes
Requirements	Modules 1 and 2. If done in-presence, moderately large open space where students can discuss and present in groups
Hardware and Software tools used	Remote: Software - Video-conferencing software. Real time online collaboration text editor and presentation software. Hardware - Desktop/laptop computer
Type of assessment	Assessment is based on the understanding of the issues discussed in class displayed through a representation of arguments supporting the positive impact of AI, and through critical discussions that question those arguments.

To consider the “positive” impact of AI means to identify in which cases and through which modalities AI technologies are used to help address some of the world’s most pressing challenges. These challenges can refer to the priorities outlined in the United Nations’ 17 Sustainable Development Goals (SDGs). The objective of this activity is to facilitate the understanding of how the use of AI technologies can have a positive impact on the real world through the representation of supporting arguments and examples. Comments and questions challenging these arguments will also be encouraged and explored. .

Procedure (steps)

Anticipatory Set

- Teachers introduce the SDGs to the class, dwelling briefly on the 17 goals and emphasising their overall ethos: "leaving no one behind".



- Teachers can remind students of an artificial intelligence system previously studied in Module 1 (for example chatbots, digital assistants, search engines, etc.). Teachers introduce some examples of the positive impact of AI technologies on key real world issues (e.g. healthcare, climate change, research...) taken from the SDGs exploration and from “AI for Good” list (see resources for teachers below).
- Teachers explain that an intervention with a positive impact on one SDG could be detrimental to another SDG and its targets. Awareness of this interconnectedness should be a driving principle for fair and inclusive AI for social good: AI applications should aim to maximise a net positive effect on as many SDGs as possible, without causing avoidable harm to other SDGs.

Direct Instruction

- Teachers divide students into groups of 3-8 students.
- Each group directly searches on Google one example of AI technologies addressing one or more SDGs; Example: By texting “AI and Education” (SDG n. 4, Quality Education) on Google, it is easy to discover existing products that combine computer vision intelligence and augmented reality technology to improve the way students learn in the classroom (for example, instead of reading about a volcanic eruption, the system shows students a virtual 3D model of the eruptive process).
- The example is briefly described on a poster board through a graphic representation. The group then tries to imagine other possible positive uses of the AI tools studied in Modules 1 and 2 (e.g. chatbots, digital assistants, search engines, image recognition etc.) and adds them to the board.

Guided Practice and Understanding

- Each group then presents their work to the class, briefly explaining the connection between the chosen example and one or more of the SDGs. After the explanation, the

class discusses with the help of the teacher whether the benefits identified for some SDGs may be to the detriment of others.

Troubleshooting

Possible issue	Possible solution
The AI examples of applications of AI in the real world are unclear to the students, or students can not relate the concepts they learned previously with the applications of AI they are trying to explain.	Assurance from the teacher and re-explanation of high-level concepts if needed.
Students unwilling to physically play out an application of AI technologies in the real world	Partnering with a drama teacher and making the enacting part of the lesson in a more appropriate environment, such as a school theatre or a large space
Students unwilling to challenge the examples and arguments presented by one group	Teacher asks questions that encourage critical debate on specific applications of AI

Resources for teachers

Resources that can be used in class for introducing examples of AI for good

Title	Description	Link	Languages
The Sustainable Development Goals	Document on the 17 Sustainable Development Goals that were set up in 2015 by the United Nations General Assembly and are intended to be achieved by 2030	https://issuu.com/unpublications/docs/sdg_yak_en	ENGLISH
Go Goals!	Game on the Sustainable Development Goals	https://go-goals.org/	Available in ENGLISH, ITALIAN and GREEK
UNICEF - Artificial Intelligence for Children	Video describing UNICEF strategy to better understand how Artificial Intelligence (AI) systems can protect, provide for, and empower children	https://www.youtube.com/watch?v=b5w1UySIRjI&feature=emb_imp_woyt	ENGLISH and Autotranslated captions

AIWS - AI For Social Good	Webpage with examples of artificial intelligence applications for good	https://aiworldschool.com/ai-for-social-good/	ENGLISH
Instagram profile of AIDA, a humanoid AI robot artist	Instagram profile of AI.DA a robot artist	https://www.instagram.com/p/CWvNpHEIVnO/	ENGLISH
The next Rembrandt	Video that explains the challenge for an AI to imitate Rembrandt's painting style	https://www.youtube.com/watch?v=luygOYZ1Ngo	ENGLISH and Autotranslated captions
Franz Schubert - Symphony No.8 in B minor, D.759 ("Unfinished") finalized by artificial intelligence	Artificial intelligence has finished composing Schubert's unfinished work	https://www.youtube.com/watch?v=wZaJvZy-LE	ENGLISH with subtitles
Изкуствен интелект дописа „Десетата симфония“ на Бетовен	AI completed Beethoven's tenth symphony	https://btvnovinite.bg/svetut/izkustven-intelekt-dopis-a-desetata-simfonija-na-betoven.html	BULGARIAN
БЪЛГАРСКИ УЧЕН СПЕЧЕЛИ 2 МЛН. ЕВРО ЗА ПРОЕКТ ЗА НОВ ТИП ИЗКУСТВЕН ИНТЕЛЕКТ	A video about Bulgarian scientist Prof. Martin Vechev who won a prize for developing new type of AI	https://btvnovinite.bg/predavania/tazi-sutrin/balgarski-uchen-specheli-2-mln-evro-za-proekt-za-nov-tip-izkustven-intelekt.html	BULGARIAN
Българи създадоха изкуствен интелект за програмиране на най-добрия футболен отбор	A video about a Bulgarians who developed AI for creating the best football team	https://europeans.bntnews.bg/balgari-sazdadoha-izkustven-intelekt-za-programirane-na-nai-dobriya-futbolen-otbor-567news.html	BULGARIAN
Изкуствен интелект би могъл да спаси пчелите от изчезване	A video about a Bulgarian AI project for protecting the bees from extinction	https://bnt.bg/bg/a/izkustven-intelekt-bi-mogl-da-spasi-pchelite-ot-izchezvane	BULGARIAN
Berthoud - изкуствен интелект на полето	AI in agriculture	https://drive.google.com/file/d/1HeEGg5zuBeozW8dDVHdRJJRZ7P3705ZP/view?usp=sharing	BULGARIAN
CNBC - Robotics, AI and farming	AI in agriculture	https://drive.google.com/file/d/12kWt77VAXzZ4-EEExgThXVmvWic4s0dQe/view?usp=sharing	BULGARIAN with ENGLISH subtitles
Изкуствен интелект: Как роботизирана	How a robotic arm helps with online ordering	https://btvnovinite.bg/predavania/tazi-sutrin/izkustven-intelekt-kak-robotizirana	BULGARIAN

ръка помага при обработката на онлайн поръчки?		-raka-pomaga-pri-obrabotkata-na-onlajn-porachki.html	
По стъпките на Бил Гейтс: 15-годишният Радостин създава изкуствен интелект	15-year-old student creates AI	https://www.bgonair.bg/a/36-sutreshen-blok/212460-po-stapkite-na-bil-geyts-u-chenikat-radostin-sazdava-izkustven-intelekt	BULGARIAN

AI for good resources:

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- A list of examples of artificial intelligence applications for good <https://www.crisscrossed.net/2018/12/19/12-inspiring-examples-of-artificial-intelligence-for-good/>
- Use of AI to tackle climate change. Climate Change AI. <https://www.climatechange.ai/about>
See also <https://tate.it/blog/post/come-puo-lintelligenza-artificiale-limitare-gli-effetti-del-cambiamento-climatico/>
- How can AI apply to agriculture? Norton Rose Fulbright. <https://www.nortonrosefulbright.com/en-ke/knowledge/publications/6400e1ea/artificial-intelligence-and-the-future#section3>
- Finn Church Ald & Solita. 2020. How Blockchain can increase trust and transparency in humanitarian aid. <https://www.solita.fi/en/customers/how-blockchain-can-increase-trust-and-transparency-in-humanitarian-aid/>