AI curriculum for children

1.	Borjana Dine	Albania
2.	Libor Manda	Czechia
3.	Klára Karimaghai	Czechia
4.	Lise Qvistgaard	Denmark
5.	Fanny Katona	Hungary
6.	Luca Magyar	Hungary
7.	Noémi Nyisztor	Hungary
8.	Tracy Hogan	Ireland
9.	Ieva Megne	Latvia
10.	Biljana Risteska	North Macedonia
11.	Nelli Kongshaug	Norway
12.	Natalia Wójcicka	Poland
13.	Bianca Stan	Romania
14.	Marko Puschner	Slovenia
15.	Elina Johnsson	Sweden
16.	Karl Hopwood	Insafe/EUN

A recording of the meeting can be found here https://youtu.be/a_h6V34O_q4

A copy of the presentation can be found here.

AI for Kids is a non-profit organisation that has been helping to improve education to keep pace with a rapidly changing world since March 2022. They work with educators, school leaders and students on their journey to understanding technology and how to use it meaningfully for the development of people and society.

A lot has been achieved over the last four years with quite a small team. The organisation is supported by both the CZ government and private companies and is currently working with over 150 schools in Czechia. This has provided an important insight into how schools are (or are not) functioning with regards to AI and tech implementation in general.

It is very clear that digital literacy skills need to be even higher in schools when AI is being used.

Tools of change

AI for Kids has developed a number of tools for change that can be used by anyone in formal and informal settings. These include:

- An AI curriculum with more than 50 methodologies across different subjects – all of these materials are freely available and have been translated into English. https://kurikulum.aidetem.cz/en The content can be used with children from the age of 6 upwards and can be amended. There is a new topic focusing on wellbeing.
- Training for teaching staff
- Training of trainee teachers at universities
- AI assistants (Tiny)
- Instructional materials and prompts
- AI accelerator (system change)

- Academies and evening schools – AI ambassadors, change leaders
- Activities for parents with children, seniors, librarians

AI and wellbeing

Some thought was given as to the best way to communicate wellbeing – how can we build a relationship with AI tools on an intimate level. The idea is to build on a story. So, in the case of wellbeing, children will follow the fictional story of Sarah, a teenager who publishes blog posts. Young people then have to take on the role of a detective to find the sensitive information about Sarah that might be available (e.g. where she lives, which school she goes to, the names of her parents etc.).

An interactive game that can be split into 3 x 45 m sessions has been developed to introduce the topic of AI through playful learning. It aims to:

- Identify and provide real-world examples of data
- Describe devices used for data collection
- Define machine learning with teacher guidance
- Explain the concept of bias in AI

These resources all come with a full lesson plan, an explanation of the vocabulary that will be used and also provide a lot of questions to set the scene with some possible answers from children so that the teacher has an idea of what to expect. Open-source tools are used and care is taken around age restrictions. There are also opportunities to reflect on and evaluate the activities, how to provide homework or a follow up.

The presentation can be made available as a PDF or as a template in Canva so teachers can edit these themselves and amend to their own pupils. Worksheets are also provided where needed.

All of the materials are interactive and there are no theoretical sessions. The idea is that all of the exercises can be immediately used by teachers or used as a source of inspiration on how to use AI. Consideration has been given as to how AI can be used in the real world outside of the classroom. The idea is that using AI should feel really natural.

A team of 20 lecturers will train teachers in school and also teacher training students at university and provide teachers with an AI mindset.

An AI assistant is being developed called Tiny. This can help with admin topics or even to evaluate student outputs. Teachers need to be taught how to use it. The system prompts are shared too. The Tiny app is supported by Google and will be tested in 50 schools. Pupils can also use the app – they can upload their work and assess themselves in the app. The AI will then translate and prepare this in order to help the teacher to assess and evaluate the child. It can identify strengths and weaknesses and provide a personalised plan for homework etc. The teacher has full control of Tiny and can direct the chatbot on which topics to provide to a child – the teacher will also see what the child is saying to the app.

A question was asked about data retention but the data stays within the app and the app does not “learn” from the content that is shared with it.

Thought has been given as to how these tools of change can be used in a more nationwide model. A Czech bank has implemented the tool into their financial awareness curriculum in order to improve financial literacy so there is some cooperation with the private sector already.

The Ministry of Education in Slovakia has adopted the AI curriculum as part of a revision to their own national curriculum and this will be implemented in schools.

Ukraine will also use the curriculum.

Austria, Denmark and Spain have invited trainers to present the curriculum.

The AI accelerator is a pilot project which is focused on the systemic introduction of artificial intelligence into school operations, teaching, management and administration. Methodology has been taken from the private sector and the aim is to try and implement this in schools. If it works, why does it work – what is the environment that it works in and where will it not work. The Ministry of Education in Czechia has been invited to be involved. There is a focus on 6 key areas of change:

- Working with teaching staff
- School culture and communication
- Data management and use
- Administration automation
- Transformation of the school's educational strategy
- inclusion

Ai for Kids is working with a range of schools – not just in Prague, looking to see if their culture and environment can adopt the tools of change and make them work.

One challenge is that schools tend to be excited and engaged at the outset, they get some training but then go back to the old ways of doing things. A mentor is assigned to the school who can advise on the AI curriculum and how to implement this as a natural part of the school.

The mentor keeps in touch with the school regularly and encourages teachers to try new things – they feel supported and that someone is helping. The Regions are hiring people to take on the mentoring role and this is something that the government will offer to schools.

Each school also has a change leader appointed, someone who is already on the staff who will promote AI within the school. They will be the main point of contact for the mentor. The combination of mentor and change leader is the most important approach in order to make change happen.

The most important finding from the work so far:

A school's culture has a greater influence on its development in the field of AI and digital technologies than the level of digitalisation itself.

A school can have all the kit and training available but without the culture to support it nothing will happen. Change management is needed.

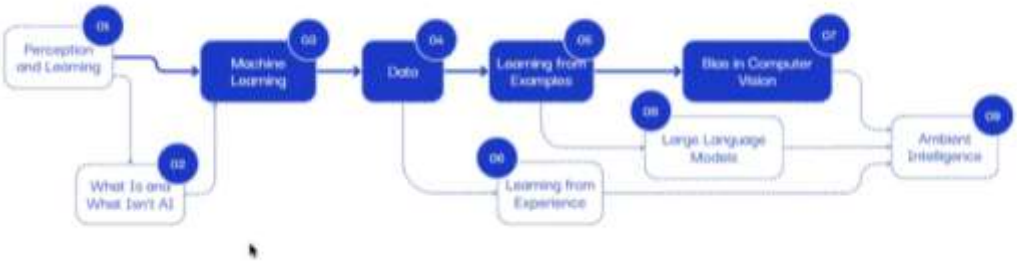
Q&A

How did you decide on the topics you landed on – tying in with subjects in school – were there explicit links that mentioned AI or did you just map this?

We have discussions with the schools – we have regular sessions and have an active community on Slack – we do meet ups and we visit the schools – we speak to teachers and children – we have focus groups so we're in the loop of what is happening. We have around 20 lecturers and make sure that they are all from the school environment – they are a great source of information for us.

What about the content for the youngest children?

Hoo and Ray are robots and they explain how AI works. The learning progress map below outlines the key concepts that children should understand during elementary school.



Consideration is given as to how we learn and how a computer learns.

Do you talk about ethics and sustainability and ecology?

This is one of the topics that is being planned – we do struggle with this topic a bit. We're not sure if the data we are getting is correct – the companies are giving very different reports on the amount of energy/water being used etc. Lots of research being done at Tilburg University.

Are there plans to expand the topics?

Yes, ideally have more than one methodology for each subject – so looking to expand but the main goal is that the methodologies are an example of how you could prepare the lesson yourself. #

We are developing another character for wellbeing – a boy – the story of Sarah is great but we need to have the backstory etc. We will have a different type of topic that we can cover with a boy.