



## PUBLICATIONS ON AI AND EDUCATION (EU-UNESCO-OCDE-COE)

### Bibliography information

- Submitted : November 15<sup>th</sup> 2023
- The resources are classified by subject and then by decreasing date

### **FOREWORD**

While defining the objectives of the AI4T project, the project promoters drew on a range of reports and contributions from different institutions. Those references has been updated with new developments /reports and recommendations published since 2020 when the project was written.

### **PUBLICATIONS ABOUT AI**

2023: Guidance for generative AI in education and research - UNESCO<sup>1</sup>

2022: Artificial Intelligence and Education - A critical view through the lens of human rights, democracy and the rule of law - Council of Europe<sup>2</sup>

2021: The Ethics of Artificial Intelligence - Recommendation of the UNESCO<sup>3</sup>

2021: (new release) AI Watch - Defining Artificial intelligence 2.0 - Joint Research Center Technical Report<sup>4</sup>

### **Note**

*"The second edition (to) establish an operational definition of artificial intelligence (AI)."*

Notable content: *"These include the classification of AI according to: families of algorithms and the theoretical models behind them; cognitive abilities reproduced by AI; functions performed by AI. Applications of AI may be grouped also according to other dimensions, like the economic sector in which such applications are found, or their business functions."*(see below)

2021: AI and Education: Guidance for Policy-Makers- UNESCO report<sup>5</sup>

2020: AI Watch - Defining Artificial intelligence - Joint Research Center Technical Report<sup>6</sup>



### Note

A proposal for "an operational definition of artificial intelligence to be adopted in the context of AI Watch."

Notable content: "A valuable contribution of this work is the collection of definitions developed between 1955 and 2019, and the summarisation of the main features of the concept of artificial intelligence as reflected in the relevant literature."

2020: AI in Education: Change at the Speed of Learning - UNESCO Institute for Information Technologies in Education report<sup>7</sup>

2020: White Paper On Artificial Intelligence - A European Approach to Excellence and Trust - European Commission<sup>8</sup>

2020: Emerging Technologies and the Teaching Profession - Ethical and pedagogical considerations based on near-future scenarios - A Joint Research Centre Report<sup>9</sup>

### Abstract

"The aim of the scenarios is to see the future as something to shape. These near-future scenarios aim to solve a number of problems that educators of today say prevent them from delivering quality education and training. They take place in classrooms, lecture halls, training centres and digital learning environments in which emerging technologies could be used to support educators in their profession. Key challenges emerging from the scenarios relate to ethical considerations (e.g. balance between human autonomy and machines, datafication of education, pedagogical models) and the evolving competence requirements of teaching professionals."

2019: The Impact of AI on Learning Teaching and Education - A Joint Research Centre Report<sup>10</sup>

### Abstract

"A report that describes the current state of the art in artificial intelligence (AI) and its potential impact for learning, teaching, and education. It provides conceptual foundations for well-informed policy-oriented work, research, and forward-looking activities that address the opportunities and challenges created by recent developments in AI. The report is aimed for policy developers, but it also makes contributions that are of interest for AI technology developers and researchers studying the impact of AI on economy, society, and the future of education and learning."

2019: Beijing Consensus on Artificial Intelligence and Education - UNESCO<sup>11</sup>



2019: Ethics Guidelines for trustworthy AI - High-Level Expert Group on Artificial Intelligence report<sup>12</sup>

#### Info

Those guidelines gave way to ALTAI: The Assessment List for Trustworthy Artificial Intelligence"<sup>13</sup>, a practical tool that helps businesses and organisations to self-assess the trustworthiness of their AI systems under development."

2018: A Definition Of AI: Main Capabilities And Disciplines - High-level Expert Group on Artificial Intelligence report<sup>14</sup>

#### Info

"This document expands the definition of Artificial Intelligence (AI) as defined in the Commission Communication on AI. It clarifies certain aspects of AI as a scientific discipline and as a technology, with the aim to avoid misunderstanding, to achieve a shared common knowledge of AI that can be fruitfully used also by non - AI experts, and to provide useful details that can be used in the discussion on both the AI ethics guidelines and the AI policies recommendations.

## SOME INFOS ABOUT THE RESOURCES

### High-level Expert Group on Artificial Intelligence<sup>15</sup>

"A group of experts to provide advice on its artificial intelligence strategy appointed by the European Commission."

### UNESCO - United Nations Educational, Scientific and Cultural Organisation

- UNESCO is committed to harness the potential of AI technologies for achieving the Education 2030 Agenda, while ensuring that its application in educational contexts is guided by the core principles of inclusion and equity."
- UNESCO IITE<sup>16</sup> - Institute for Information Technologies in Education "The mission of IITE is to promote the innovative use of ICT and serving as facilitator and enabler for achieving Sustainable Development Goal 4 (SDG 4) through ICT-enabled solutions and best practices."



## OECD - Organisation for Economic Co-operation and Development

- OECD is an "international organisation that works to build better policies for *better lives*". Its "goal is to shape policies that foster prosperity, equality, opportunity and well-being for all."
- The OECD Artificial Intelligence<sup>17</sup>: "Provides data and multi-disciplinary analysis on artificial intelligence." Its "diverse global community of partners makes this platform a unique source of information and dialogue on AI."
- The OECD leads many activities around AI. These activities range from: prospective analysis of the effects of AI on the labour market<sup>18</sup> to recommendations for developing trustworthy AI<sup>19</sup>. The site also offers a large amount of monitoring work on AI and all areas of public policy around the world<sup>20</sup>
- **Education**: many reports and datasets related to education are gathered by the OECD. It also provides the possibility to visualise "timely trends about where, how and at what rate AI is being developed and used" in Education<sup>21</sup>.

## Council of Europe

The **Council of Europe and Artificial Intelligence**<sup>22</sup> leads many activities led by the Committee on Artificial Intelligence (CAI)<sup>23</sup> around AI grouped under the heading 'Towards an application of AI based on human rights, the rule of law and democracy'<sup>2</sup>

1. Guidance for generative AI in education and research [←](#)
2. Artificial Intelligence and Education - A critical view through the lens of human rights, democracy and the rule of law - Council of Europe, <https://rm.coe.int/artificial-intelligence-and-education-a-critical-view-through-the-lens/1680a886bd> [←](#) [←](#)
3. The Ethics of Artificial Intelligence - Recommendation of the UNESCO, <https://unesdoc.unesco.org/ark:/48223/pf0000377897> [←](#)
4. AI Watch 2.0- Defining Artificial intelligence, <https://publications.jrc.ec.europa.eu/repository/handle/JRC118163> [←](#)
5. AI and Education: Guidance for Policy-Makers- UNESCO report, <https://unesdoc.unesco.org/ark:/48223/pf0000376709> [←](#)
6. AI Watch - Defining Artificial intelligence 2.0, <https://publications.jrc.ec.europa.eu/repository/handle/JRC126426> [←](#)
7. AI in Education: Change at the Speed of Learning - UNESCO Institute for Information Technologies in Education report, <https://iite.unesco.org/publications/ai-in-education-change-at-the-speed-of-learning/> [←](#)
8. White Paper On Artificial Intelligence - A European Approach to Excellence and Trust - European Commission, [https://commission.europa.eu/document/d2ec4039-c5be-423a-81ef-b9e44e79825b\\_en](https://commission.europa.eu/document/d2ec4039-c5be-423a-81ef-b9e44e79825b_en) [←](#)



9. Emerging Technologies and the Teaching Profession, <https://publications.jrc.ec.europa.eu/repository/handle/JRC120183> ↩
10. The Impact of Artificial Intelligence on Learning, Teaching, and Education, <https://op.europa.eu/en/publication-detail/-/publication/5cb8eee3-e888-11e8-b690-01aa75ed71a1/language-en> ↩
11. Beijing Consensus on Artificial Intelligence and Education - UNESCO, <https://unesdoc.unesco.org/ark:/48223/pf0000368303> ↩
12. Ethics guidelines for trustworthy AI, <https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai> ↩
13. ALTAI: The Assessment List for Trustworthy Artificial Intelligence, <https://futurium.ec.europa.eu/en/european-ai-alliance/pages/welcome-altai-portal> ↩
14. A Definition Of AI: Main Capabilities And Disciplines, [https://ec.europa.eu/newsroom/dae/document.cfm?doc\\_id=60651](https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=60651) ↩
15. High-level Expert Group on Artificial Intelligence, <https://digital-strategy.ec.europa.eu/en/policies/expert-group-ai> ↩
16. UNESCO Institute for Information Technologies in Education, <https://iite.unesco.org> ↩
17. The OECD expertise on Artificial Intelligence, <https://oecd.ai/en/> ↩
18. OECD - Prospective analysis of the effects of AI on the labour market, <https://oecd.ai/en/work-innovation-productivity-skills/key-themes/labour-markets> ↩
19. OECD AI Principles overview, <https://oecd.ai/en/ai-principles> ↩
20. OECD Trends and data about AI, <https://oecd.ai/en/trends-and-data> ↩
21. OECD Trends and data about AI in Education, <https://oecd.ai/en/data?selectedArea=ai-education> ↩
22. The Council of Europe and Artificial Intelligence, <https://oecd.ai/en/data?selectedArea=ai-news> ↩
23. Council of Europe : Committee on Artificial Intelligence (CAI), <https://www.coe.int/en/web/artificial-intelligence/cai> ↩